

United States Department of Energy
Laboratory, Plant or Site Directed Research and Development Report
Project List -- Fiscal Year 2003

ANL - Argonne National Lab

Project ID	Project Name	Total
P/ANL2000-217-R3D	Photoprocesses in Hybrid Nanostructures: Fundamental Interaction/Communication Mechanisms between Nanodomains	\$232,480
P/ANL2000-217-R3G	Synthesis and Properties of Cluster-Based Nanoparticles and Assemblies	\$83,098
P/ANL2000-217-R3I	Charge Trapping Free Electrons and Photocatalysis in Aqueous TiO ₂ Nanoparticles	\$90,536
P/ANL2001-008-R2	Improvement of Coated Gallium Arsenide Fast-Neutron Detectors	\$62,982
P/ANL2001-087-R2	High Fidelity Modeling of the Human Spine on Parallel Computing Platforms	\$74,889
P/ANL2001-111-R2	Processing and Magnetic Manipulation of Layered Particles for Novel Cancer Treatment Applications	\$149,303
P/ANL2001-133-R2	Gas Phase Decontamination Technology for Sensitive Equipment	\$97,997
P/ANL2001-143-R2	X-Ray-Based Engine Research: Fuel Spray and Combustion Experiments in a Static Pressure Vessel with X-Ray Transparent Windows	\$147,630
P/ANL2001-144-R2	X-Ray-Based Engine Research: Numerical Simulation of Internal Combustion Engine Sprays	\$149,809
P/ANL2001-145-R2	X-Ray-Based Engine Research: Soot Formation	\$148,570
P/ANL2001-149-R2A	Predicting Structure from Sequence	\$387,222
P/ANL2001-149-R2B	Mapping Protein-Ligand Interactions (Combinatorics)	\$399,098
P/ANL2001-149-R2D	Membrane Proteins - Technologies for Comprehensive Functional Characterization	\$98,487
P/ANL2001-164-R2	Sensor Guided Semi-Automatic Teleoperation for RFT and D&D	\$30,047
P/ANL2001-207-R2	Cavity-Ring-Down Sensor for Monitoring Oxidants in Cardiac Arrest Patients	\$47,892
P/ANL2001-221-R2	Evaluation of Innovative Features for the Advanced Fast Reactor (new title)	\$542,117
P/ANL2002-001-R1	Laser-Based Ignition System for Natural Gas Reciprocating Engines	\$208,916
P/ANL2002-005-R1	A New Process for the Removal of Hazardous Organic Compounds from Contaminated Groundwater using an Environmentally Friendly Solvent Extraction Technology	\$122,745
P/ANL2002-006-R1	Support Vector Machine Algorithms to Merge Protein Structural Analysis and Machine Learning	\$139,443
P/ANL2002-010-R1	Computational Modeling of Clay-Polymer Nanocomposite Membranes	\$149,339
P/ANL2002-017-R1	Magnetically Stabilized Metal Clusters	\$87,828
P/ANL2002-018-R1	New Photonic Materials Based on the Self-Assembly of Nano-Structured Metallo-Organic Building Blocks	\$137,738
P/ANL2002-034-R1	Band Gap Engineering of Transparent Conducting Oxides	\$161,421
P/ANL2002-036-R1	Molten Oxide Electrolysis: A Basis for Carbon-Free Steel Production	\$134,806

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P/ANL2002-050-R1	Designer Nanocomposites for Hydrogen Storage	\$76,129
P/ANL2002-068-R1	Spin Polarized Nanostructures at Interfaces of Superconductors and Diluted Magnetic Semiconductors: New Prospects for Tunable Quantum Dot Arrays	\$78,920
P/ANL2002-085-R1	Trace Measurement of DNA Adducts by VUV Soft Ionization	\$80,473
P/ANL2002-096-R1	Extra Space-Time Dimensions	\$60,424
P/ANL2002-099-R1	Advanced Biological Sensors Based on Fluorescent Conjugated Polymers	\$85,362
P/ANL2002-109-R1	Development of Anodes for Actinide Electrolysis	\$29,967
P/ANL2002-113-R1	Development of an Out-of-Pile Liquid Metal Experiment Capability to Support AFR-300 Design and Safety Analysis	\$3,284
P/ANL2002-115-R1	Core Configuration Adaptation to Fuel Cycle Missions with Superior Passive Safety Performance (new title)	\$274,749
P/ANL2002-116-R1	Assessment and Development of Thermal Hydraulic, System Design, and Integrated Safety Analysis Capabilities for Advanced Fast Reactors	\$19,941
P/ANL2002-135-R1	Improved Capabilities for Determining Test Fuel Power and Motions in TREAT	\$1,664
P/ANL2002-147-R1	A Calorimeter for the Linear Collider Detector	\$150,037
P/ANL2002-149-R1	Derivatization of Ultrananocrystalline Diamond for Bioassays	\$90,208
P/ANL2002-152-R1	Petascale Experimental Research (PXR)	\$1,119,098
P/ANL2002-153-R1	Prokaryotic Simulation System: Computational Biology and Bioinformatics -- The Science Drivers for PXRF	\$1,008,442
P/ANL2002-154-R1B	Computational Science for Self-Assembly	\$90,968
P/ANL2002-161-R1	Environmental Decision Making Technology R&D	\$99,971
P/ANL2002-163-R1	Capabilities Development for the Analysis of Complex Adaptive Systems	\$261,565
P/ANL2002-185-R1	Nano-Bio Composite Structures	\$192,138
P/ANL2002-186-R1	Nanophotonics	\$203,271
P/ANL2002-187-R1	Quantum Materials	\$200,375
P/ANL2002-188-R1	Adaptive Nanoscale Self-Assembly	\$200,392
P/ANL2002-192-R1	Development of Nanofabrication Techniques using Advanced Lithography	\$290,246
P/ANL2002-193-R1	Development of Instrumentation for the Spallation Neutron Source (SNS)	\$204,200
P/ANL2002-194-R1	Surface Spin Polarization for Spintronics	\$75,494
P/ANL2002-195-R1	Catalytic Destruction of Chemical Threats in Human Occupied Spaces	\$49,715
P/ANL2002-196-R1	Hybrid and Patterned Nanomagnetic Systems	\$300,353
P/ANL2002-199-R1	Nanoscale Multiferroics for Coupled Magnetic and Ferroelectric Functionality	\$79,786

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P/ANL2002-200-R1	Nanoscience and Biomineralization	\$78,331
P/ANL2002-201-R1	Synthesis and Physical Properties of Functionalized Diblock Copolymers and Magnetic Nanocrystal Arrays (new title)	\$71,999
P/ANL2002-202-R1	UHV STM for Self-Assembled Magnetic Nanowires	\$50,256
P/ANL2002-203-R1	Fabrication of Nanowires with Anodized Aluminum Oxide	\$50,703
P/ANL2002-204-R1	Imaging of Nanoscale Vortex States in Superconductors by Scanning Tunneling Spectroscopy	\$50,550
P/ANL2002-205-R1	Surface Functionalization of Ultrananocrystalline Diamond Thin Films	\$78,301
P/ANL2002-206-R1	Counter Terrorism Application of Agent Based Simulation	\$80,542
P/ANL2002-210-R1	Innovative Strategy of Biotoxin Removal from Exposed Humans: Magnetic Nanoparticle Sequestration and Dialysis	\$189,426
P/ANL2002-211-R1	Interacting Laterally Patterned Magnetic Structures	\$200,848
P/ANL2002-212-R1	Thermal Transport in Nanostructures and Nanocomposites	\$78,149
P/ANL2002-213-R1	Self-Assembly and Self-Organization of Nanostructures by Multiscale Materials Simulation	\$74,722
P/ANL2002-216-R1	Ozone and Aerosols in Metropolitan Chicago: Land-Lake Breeze Effects	\$77,402
P/ANL2003-010-N0	Preparation and Crystallization of Membrane Proteins, MerC and MerT Involved in Bacterial Mercuric Ion Detoxification	\$79,704
P/ANL2003-040-N0	Vortex Cellular Automata: Computing with Superconducting Vortices in Nanoscale Devices	\$90,385
P/ANL2003-053-N0	Development of Analytical Capabilities for Nuclear Forensic Applications	\$102,322
P/ANL2003-064-N0	Bio/Inorganic Hybrid Arrays for Photovoltaic Cells and Biological Sensors	\$134,910
P/ANL2003-073-N0	The Control of Shape, Size, and Reactivity of Metal Oxide Nanoparticles	\$123,060
P/ANL2003-080-N0	Laser Trapping and Cooling of Radium-225	\$86,635
P/ANL2003-087-N0	Development of Surface Treatments for Ultra High Gradient Accelerator Cavities	\$144,243
P/ANL2003-103-N0	Fluxoid Manipulation by Josephson Vortices: New Opportunity for Vortex Logic	\$85,785
P/ANL2003-105-N0	Ultrafast Spectroscopy, Combining Lasers and X-Rays	\$116,929
P/ANL2003-106-N0	Metabolome Analysis from Aptamer Biochips	\$141,105
P/ANL2003-117-N0	Quantized Magneto-Catalysis of Electron Transfer Reactions	\$79,453
P/ANL2003-119-N0	Tunable Terahertz Sources	\$145,942
P/ANL2003-124-N0	Development of Polysiloxane-Based Solid Electrolytes for Lithium Batteries	\$135,847

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Project ID	Project Name	Total
P/ANL2003-128-N0	Novel Thin-Film Diamond Electronics	\$100,380
P/ANL2003-146-N0	Synthesis of High Temperature Superconductor Wires using Novel Atomic Layer Deposition Synthesis	\$146,190
P/ANL2003-151-N0	Time-Resolved X-Tomography of Highly Transient Fuel Sprays	\$121,777
P/ANL2003-154-N0	Production of Hydrogen Gas from Hydrogen Sulfide	\$144,960
P/ANL2003-158-N0	High-Sensitivity Infrared Imagers for Environmental and Energy Security/Safety Monitoring	\$80,610
P/ANL2003-164-N0	Development of High Density, High Thermal Conductivity Uranium Carbide for Efficient ISOL Targets	\$90,391
P/ANL2003-172-N0	Mass Spectral Detection of Biomolecular Interactions on a Functional Proteomic Biochip	\$199,555
P/ANL2003-173-N0	Functional Genomics of Endothelial Cell Tube Formation	\$285,697
P/ANL2003-175-N0	Structural Genomics of Microbial Pathogens	\$188,889
P/ANL2003-176-N0	Designer Antibodies and Interaction Mapping	\$899,880
P/ANL2003-177-N0	Nano-Architecture from the Bio-System: Fabrication, Assembly and Function	\$281,389
P/ANL2003-180-N0	Testing of a Model 345 MHz Fast Tuner for the RIA Driver Linac	\$49,838
P/ANL2003-181-N0	Isobaric Mass Separation and the Beam Properties Extracted from a RIA Type Gas Catcher	\$108,995
P/ANL2003-184-N0	Advanced Carbon Coatings for Invasive and Implantable Medical Devices	\$45,354
P/ANL2003-185-N0	High-Power Beam Dump for a Large Acceptance RIA Fragment Separator	\$61,263
P/ANL2003-188-N0	Development of a Model 3-Spoke Superconducting Resonator for RIA	\$552,620
P/ANL2003-196-N0	Tradeoff Studies for Recycle Economics	\$148,287
P/ANL2003-204-N0	Lightweight and Robust Hydrogen Storage Materials for Automotive Fuel Cells	\$150,822
P/ANL2003-216-N0	Linear Collider R&D at Argonne: High Gradient Accelerating Structures	\$321,961
P/ANL2003-217-N0	Linear Collider R&D at Argonne: High-Brightness Electron Sources	\$216,516
P/ANL2003-218-N0	Linear Collider R&D at Argonne: Damping Wigglers	\$29,615
P/ANL2003-219-N0	Investigations of the Effect of the Biogeochemical Cycling of Iron on the Fate and Transport of Heavy Metal, Radionuclide, and Organic Contaminants	\$498,778
P/ANL2003-224-N0	Separative Bioreactor Model: Using pH-Controlled Electrodeionization	\$178,977
P/ANL2003-230-N0	Demonstrate the Two-Charge State Injector Concept for the RIA Driver Linac	\$237,724
P/ANL2003-234-N0	Analysis and Development of Liquid Metal Targets for RIA	\$99,617
P/ANL2003-235-N0	Analysis and Mitigation Methods for Electrical Arc Injuries in Medical Environment	\$92,125

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P/ANL2003-236-N0	Demonstration of a Full Power Test Model of the 12 MHz Hybrid-RFQ for Acceleration of Radioactive Ions with Charge-to-Mass Ratio 1/240	\$245,015
P/ANL2003-237-N0	Study of Beam Halo Formation in Longitudinal Phase Space in the RIA Driver Linac	\$389,688
P/ANL2003-242-N0	Demonstration of Transmission Multilayer Optics for Sub-Ten-Nanometer Focusing of Hard X-Rays	\$175,505
P/ANL2003-256-N0	Development Toward a VUV FEL at the APS	\$317,216
P/ANL2003-273-N0	Development of Fuels for Fast Spectrum Gas-Cooled Reactors	\$72,817
P/ANL2003-276-N0	Evaluation of Core Materials for Gas-Cooled Fast Spectrum Reactors	\$49,081
P/ANL2003-282-N0	Concept Development for RIA Lithium Thin-Film Stripper Formation and Primary Cooling of the High Power Density Neutron Converter	\$89,974
P/ANL2003-288-N0	Demonstration and Characterization of Thin-Film Liquid Lithium Stripper for the RIA Driver Linac	\$640,888
P/ANL2003-291-N0	Environmental and Performance Benefits for a Geologic Repository from the Removal of Actinides from Spent Nuclear Fuel and Recycling in a Fast Neutron System	\$249,185
P/ANL2003-304-N0	Safety Technology for Gas Cooled Fast Reactors	\$116,914
P/ANL2003-323-N0	Developing X-Ray Transparent Windows Sustainable to Dynamic High-Pressure and High-Temperature for Imaging Applications at the APS	\$125,879
P/ANL2003-325-N0	Fuel Cycle Strategy and Cost Modeling Development and Evaluation	\$298,596
P/ANL2003-326-N0	Advanced Fast Reactor - System Integration and Concept Development	\$196,998
P/ANL2003-327-N0	Investigation of Power-Flow Instability Phenomena in SCWR Designs	\$92,973
P/ANL2003-328-N0	Investigation of Passive Safety Features for SCWRs	\$67,391
P/ANL2003-329-N0	Hydrogen Production from Low Temperature Thermochemical Cycles Compatible with Heat from a Na-Cooled Nuclear Reactor	\$296,707
P/ANL2003-330-N0	Strategic Analysis of Recycle Technologies Deployment	\$74,441
P/ANL2003-331-N0	Process and Equipment Integration in a Recycle Facility	\$302,874
P/ANL2003-332-N0	Integration of Automated Systems and Robotics for a Recycle Facility	\$71,963
P/ANL2003-333-N0	Research on Remote Fuel Fabrication Technology for Generation IV Fuel Cycles	\$224,969
P/ANL2003-334-N0	Assessment of Pyroprocessing Structural Materials for Experimental Testing	\$166,563
P/ANL2003-335-N0	Experimental Testing of Pyroprocessing Structural Materials	\$254,513
P/ANL2003-336-N0	Multidisciplinary Theory	\$262,016

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Project ID	Project Name	Total
P/ANL2003-337-N0	The Use of Synchrotron and Terahertz Radiation Sources for Homeland Security	\$157,495
P/ANL2003-338-N0	Modeling Near-Field Atmospheric Dispersion and the Potential Health and Economic Impacts from Terrorism Scenarios Involving "Dirty Bombs" or Similar Devices	\$154,704
P/ANL2003-340-N0	Core-Shell Nanocrystal Spring Magnets	\$162,922
P/ANL2003-341-N0	Simulation and Modeling of Reactivity in Nanoporous Materials	\$70,192
Total # of Projects for ANL:	129	Total Cost for ANL: \$22,418,803

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BNL - Brookhaven National Lab

Project ID	Project Name	Total
01-013	'Functional Spectral Signature' (FSS) Method for Signal to Noise-Enhancement of Brain Patterns in PET Images	\$41,383
01-030	Development of CZT Array Detector Technology for Synchrotron Radiation Applications	\$50,418
01-031	New Applications of Circular Polarized VUV-light (NANO IV)	\$51,191
01-035	Prototype Approaches for Infrared Nanospectroscopy	\$43,818
01-036	Pressure-Induced Protein Folding Monitored by Small Angle X-Ray Scattering and Fourier Transform Infrared Microspectroscopy	\$49,620
01-038	Soft Condensed Matter Probed by Low-energy Resonant Scattering	\$49,422
01-039	Femto-Second Transmission Electron Microscope Based on Photocathode RF Gun	\$64,622
01-051	Human DNA Damage Responses: DNA-PK and p53	\$61,706
01-087	Charge Transfer on the Nano Scale: Theory (NANO III)	\$17,512
01-093	High Resolution Magneto-optical Study of Magnetic Nanostructures, Nanocomposite functional and Superconducting Materials (NANO IV)	\$26,000
02-002	Crystallization and X-ray Analysis of Membrane Proteins	\$396,551
02-003	In Vitro Investigation of the DNA Double Strand Break Repair Mechanism by Non-Homologous End-Joining in the context of Chromatin	\$61,070
02-008	Creating a MicroMRI Facility for Research and Development	\$193,613
02-009	Targeting Tin-117m to Estrogen Receptors for Breast Cancer Therapy	\$98,671
02-016	Biom mineralization of Actinides: A Mechanistic Study of the Microbial Genesis of Novel and Stable Compounds	\$92,482
02-017	Using Mini CO ₂ -DIAL for Verification and Long-Term Monitoring of Cover Systems	\$124,084
02-022	Electrical Systems Reliability	\$99,081
02-024	Liquid Fuel Gasifier for Combustion and Fuel Cells	\$107,892
02-031	Study of a Power Source for Nano-Devices	\$99,045
02-042	Ultrafast Nonlinear Spectroscopic Studies of Model Catalytic Surfaces	\$185,275
02-045	Combined Use of Radiotracers and Positron Emission Imaging in Understanding the Integrated Response of Plants to Environmental Stress	\$99,809
02-046	Arranging Nanoparticles into Arbitrary Patterns with Optical Trapping	\$119,807
02-048	Advanced Multidimensional Techniques to Explore the Biochemical and Behavioral Consequences of VOC Exposure	\$94,788

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BNL - Brookhaven National Lab

Project ID	Project Name	Total
02-049	Project to Detect pp and 7Be Solar Neutrinos in Real Time: LENS, the Low-Energy Neutrino Spectrometer	\$70,006
02-053	Combined Theoretical and Experimental Study of Crystal Lattice Defects in Complex Transition Metal Oxides	\$65,745
02-055	Chemical Sensors: Immobilization of Organometallic Complexes into Sol-gel Matrices	\$84,607
02-056	Size Dependence of Catalytic Reactivity of Iron Oxide Nanocrystals	\$104,354
02-058	Femtosecond Synchronization for Ultra-Short Pulse DUV-FEL Radiation	\$134,776
02-062	Rapid Wavelength Tunability for the DUV-FEL	\$135,269
02-066	High-Gain Harmonic-Generation at the DUV/FEL	\$134,612
02-067	Biom mineralization: A Route to Advanced Materials	\$103,076
02-070	Theory of Electronic Transport in Nanostructures and Low-Dimensional Systems	\$110,055
02-071	Pressure in Nanopores	\$72,856
02-084a	Genomic Selex to study Protein DNA/RNA Interactions in Ralstonia metallidurans CH34 Regulating Heavy Metal Homeostasis and Resistance	\$167,824
02-084b	Lead Resistance in Ralstonia metallidurans CH34	\$168,766
02-085	Design of a Ralstonia metallidurans Two-Hybrid Protein System for Studying Signaling Pathways Regulating Heavy Metal Homeostasis and Resistance	\$172,175
02-086	Ultrafast X-Ray Science	\$107,670
02-088	X-Ray Photon Correlation Spectroscopy Studies of Nanostructured Block Copolymers	\$104,806
02-091	Fine-Grain Gas and Silicon Detectors for Future Experiments in Nuclear Physics at High Energies	\$96,559
03-004	High-Brightness, High-Power Electron Beams	\$149,624
03-006	Feasibility Study of Optical Stochastic Cooling with a CO2 Laser	\$109,205
03-013	Proposal for Niobium/Tin Superconducting Magnet	\$147,824
03-014	Technology Development for Linear Collider Final Focus Quadrupoles with Small-Aperture High-Gradient Superconducting Coils	\$124,829
03-025	Real-Time Detection and Multi-Dimensional Characterization of Single Air-Borne Microorganism	\$99,570
03-026	Developing a New, Unified Systems Theory on Size Distributions of Atmospheric Particles	\$45,495

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Project ID	Project Name	Total
03-027	Measurement of HO2 Radicals by ChemiLuminescence Analysis of Atmospheric Radicals (CLAAR)	\$99,480
03-030	Chemistry of the Rhizosphere	\$99,360
03-039	Integrated Analysis of Carbon and Nitrogen Metabolism in Plants and Subsequent Analysis of Photosynthetic Acclimation to Growth in Elevated pCO2	\$65,782
03-050	Evaluation of High-Energy Radiation Effects in Materials	\$98,424
03-056	Structural Properties of Methane Hydrates	\$83,870
03-061	Dynamics of Wind Turbine-Tower-Foundation Systems	\$138,302
03-064	Investigation of Neutron and Gamma Probes to Detect Explosives in Sealed Containers	\$108,782
03-065	Ultrasound and Infrared Imaging to Detect Degradation of Electric Cable Insulation	\$61,439
03-072	Application of Compton-Suppression Gamma Spectrometry to Problems in Anti-Terrorism	\$122,783
03-077	Real-Time Consequence Assessment System for Atmospheric Terrorist Events in the Northeast Urban Corridor	\$69,765
03-081	Application of Thin Film-Like Dosimeters for Port Security and Anti-Terrorism	\$109,079
03-083	Novel Xenon Detector Concepts for Homeland Defense	\$99,029
03-086	Defining New Pathways for Disarming Anthrax Toxin	\$99,955
03-094	Structural Studies on the Integral Membrane Protein AlkB	\$52,754
03-098	Roles of Dopamine Receptor Agonists in Brain Metastasis of Breast Cancer	\$97,812
03-099	The microPET Study of Gene Expression in Rodents	\$46,629
03-100	Investigation of the "Early Response" in Functional MRI	\$231,159
03-101	PET Imaging of Violent Behavior	\$95,168
03-103	PET Study of Acetaldehyde Distribution and Metabolism to Better Understand Alcohol Related Diseases	\$99,469
03-104	Hydrogen Atom Transfer from Carbon to Metal - Relevance of a Novel Reaction to Catalyzed Hydrocarbon Conversions	\$19,643
03-105	Radioprotection in D. Radiodurans, a Radiation Resistant Bacterium	\$57,100
03-107	New Development of Norepinephrine Transporter Radioligands for PET Studies of Substance Abuse, Depression and ADHD	\$112,074
03-108	Experiments in the Short-Wavelength Regime Pertinent to the DUV-FEL Concept	\$132,731

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03-115	Imaging Tandem Mass Spectrometry for High-Throughput "Fingerprint" Detection of Complex Molecules in Mixtures	\$112,241
03-118	Condition: Green Chemistry Radiolytic Studies of Ionic Liquids in Service of Security and the Environment	\$42,416
03-119	Exploring the Use of Powder Diffraction for Proteins	\$44,700
03-121	Element-Resolved Dynamics of Nanoscale Ferromagnets	\$28,641
03-122	Membrane Biophysics Using Single-Layered Lipid Membrane	\$29,571
03-127	High Pressure in Strongly Correlated Materials - An Optical Investigation	\$53,679
03-129	Polyoxometalate Giant Molecules: Novel Synthetic Methods, Characterizations and Potential Applications	\$54,426
03-131	Continuous Spallation Neutron Source	\$5,192
03-135	Exploratory Sol-Gel Synthesis Routes for Perovskite Nanorods and Dots	\$63,285
03-137	In Situ Soft X-Ray Absorption Spectroscopy Studies of Cathode Materials for Thin Film Lithium-Ion Batteries	\$75,354
03-138	Functional Bulk Mn-Based Nanocomposites	\$27,917
03-144	Nanostructured Transition Metal Oxides	\$39,172
03-151	Radio Wave Detection of Ultra High Energy Cosmic Rays	\$99,914
03-161	Generation of Coherent, Femtosecond, High Brightness VUV and X-Ray Using High Order Harmonic Conversion	\$129,593
03-162	New Synthesis Techniques to Control Atomic Defects in Advanced Intermetallic Compounds	\$85,825
Total # of Projects for BNL: 83		Total Cost for BNL: \$7,830,078

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NEEL - Idaho National Engineering and Environmental Lab

Project ID	Project Name	Total
AC101	Parallel Computing with Cluster Technology	\$327,759
AC102	Improving Numerical Model Efficiency of a Simulation Model	\$97,045
AC103	Aerospace Situation Awareness and Risk Monitor Tool	\$95,245
AC104	Development and Validation of Advanced Simulation and Collaboration Capability	\$170,002
CE108	Genetic Control of Straw Stem Ultrastructure that Affects the Biomechanics of Stem Separation.	\$201,105
CE109	Computational Fluid Dynamics Model Based Control of Two-Phase Flow	\$120,526
CE110	Development of Analytical Decision-making Tools for Energy Efficient Agricultural Biomass Production	\$97,993
CE111	Stable Enzymes for Hemicellulose Hydrolysis	\$136,678
CE112	Pretreatment Technologies for Cellulosic Biomass	\$139,469
CE113	Flow Characterization of Complex Biomass Flows for Bioenergy Feedstock Development	\$49,486
CS114	Critical Infrastructure, Critical Subnetwork	\$324,901
CS117	Development of a Compact Laser-Compton X-ray Source	\$177,925
CS118	Advanced Automated Ion Mobility Spectrometer for Explosives Detection	\$178,135
ES101	Cermet Filters for Hazardous Material, Chemical and Biological Agent Destruction	\$356,601
ET105	Biologically Based Catalysts for Processing and Detection in Harsh Service Conditions	\$216,354
ET106	Exploration of Support Frameworks for Sustainable Clean-Up Decisions	\$134,590
ET107	Recombinant Adhesive Protein Production and Investigation into Alternate Natural Adhesive Systems in Marine Mussels	\$99,649
ET108	Improving Stakeholder Interactions: A Stakeholder-based Research Methodology for Reaching Decisions on Polarized Issues	\$94,148
ET110	Elemental Tracers and Multi-Variate Receptor Modeling Methods in Assessing Air Pollution	\$112,826
ET114	Use of Engineered Nano-Particles for Nutrient Delivery and Bioremediation in Subsurface Environments	\$128,037
ET116	Advanced Control Architectures for Human-Robot Synergy in Complex, Multi-Operation Domains	\$224,859
ET117	Model-Based Decision Making: Conceptual Framework and Environmental-Related Application Development	\$74,640
ET118	Intelligent Control of Multi Nodal Systems	\$98,602

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NEEL - Idaho National Engineering and Environmental Lab

Project ID	Project Name	Total
ET119	Understanding Societal Issues Associated with Acceptance of Bioremediation Strategies	\$45,509
ET120	A Research-Centered and Performance-Based Approach to Advanced Emergency Response Planning Support System Design	\$47,474
ET121	Human Factors for Management of High Consequence Events	\$60,866
ET122	Developing the Scientific Basis for Landscape Level Management of Federal Facilities	\$40,309
GC101	Fundamental Studies on Gas Contaminant Mobility in the Vadose Zone from Atmospheric Pressure Fluctuations	\$135,256
GC102	Regional Setting and Flow Dynamics of the Snake River Plain Aquifer	\$275,155
GC105	Advanced Borehole Seismic Sources for High-Resolution Subsurface Imaging and Characterization for Environmental Applications	\$345,395
GC106	Enhanced Techniques for Evaluating Colloidal Transport Processes	\$203,477
GC108	Advanced Technology for Mapping Subsurface Water Conductivity	\$185,320
GC109	Development of Enzymatic Biosensors for Environmental Applications	\$159,242
GC111	Hybrid Nanocomposite Materials as Subsurface Permeable Reactive Barriers	\$287,069
GC114	Kinetics and Mechanisms of Inter-Surface Transfer, and Solid-Solution Partitioning, of Surface-Complexed Metals in Colloidal Systems	\$123,232
GC116	Organic Co-Solvent and Co-Contaminant Effects on Sorption of Uranyl and Cesium to Metal Oxide Surfaces	\$124,019
GC117	Evaluating Microelectrodes and Fiber-Optic Probes for use in Meso-Scale Experiments	\$188,450
GC119	Development of Imaging Fourier Transform Mass Spectrometer Capabilities for Analyses of Complex & Heterogeneous Samples	\$332,959
GC124	Use of Molecular Markers for Detection and Tracking of Environmental Bacteria	\$99,826
GC125	Natural and Synthetic Subsurface Colloids	\$243,321
GC130	Development of Techniques for In Situ Measurement of Groundwater Contaminant Source Strength	\$144,994
GC131	Characterizing Microbial Population Shifts in Response to Alternative Electron Donors and their Effect on Trichloroethylene Dechlorination Efficiency	\$158,830
GC133	Electrical Resistivity Imaging to Define Preferred Flow Paths in a Heterogeneous Layered Vadose Zone	\$79,388
GC134	Development and Application of Custom Flow Models for Understanding Flow in Porous and Fractured Matrices with Biological Components	\$212,459

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NEEL - Idaho National Engineering and Environmental Lab

Project ID	Project Name	Total
GC135	Investigation of the Movement and Fate of Chlorinated Hydrocarbons	\$337,852
GC136	Modeling of flow and colloid behavior in subsurface fractures	\$288,118
GC138	Application of New Borehole Geophysical Methods for Stratigraphic Correlation and Identification of Non-Aqueous-Phase Contaminants	\$115,235
GC140	Computational Experiments of Hysteretic Chemical and Moisture Migration	\$307,156
GC141	Calibration and Enhancement of Geophysical Imaging Tools in a Mesoscale Experimental Facility	\$465,020
GC144	Characterization of Nonlinear Complex Resistivity Spectra During Biochemical Reduction of Cr+6 to Cr+3	\$142,021
GC145	Dual Electrodes and Defining the Electrically Disturbed Region in Induced Polarization Measurements	\$138,709
GC147	Use of Genetic Markers for Ecological Risk Assessment	\$217,459
GC149	Uptake and Translocation Patterns of Strontium by Sagebrush Steppe Ecosystem Plants	\$99,951
GC150	Multiscale Modeling of Multiphase (Unsaturated) Flow	\$92,114
GC151	Modeling Solute Partitioning at Interfaces	\$109,335
GC152	Estimating the Climatic Sensitivity of Vadose Zone Infiltration Rates through Paleohydrologic Analyses	\$67,330
GE101	The Modular Pebble-Bed Reactor	\$220,744
GE102	Advanced Transient Analysis Capabilities for the Next Generation Nuclear Reactors	\$204,551
GE103	Gas-Cooled Reactor System Analysis Tools	\$160,292
GE104	Advanced Nuclear Fuels for Enhanced Proliferation Resistance	\$233,503
GE105	Design of an Actinide Burning, Lead or Lead-Bismuth Cooled Reactor That Produces Low Cost Electricity	\$406,907
GE107	An Innovative Gas-Cooled Fast Reactor	\$546,285
GE108	Advanced Fission Product Detection Systems for the Next Generation Nuclear Reactors	\$184,024
NC101	Nanostructure Characterization for Sensing	\$107,466
NC103	Enhanced Transport in Nanocrystalline Ceramic Films	\$114,041
NC104	Nucleation and Growth of Nanoparticle Materials in Supercritical Fluid Processes	\$102,587
NE108	Two-Phase Mass Flow Measurement for Geothermal Wells	\$54,957

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NEEL - Idaho National Engineering and Environmental Lab

Project ID	Project Name	Total
NE111	Friction Stir Welding of Lightweight Materials for Automotive and Transportation Systems	\$146,131
NE114	Energy Efficient Building Simulation and Technologies	\$148,209
NE117	Active Neutron Spectrometry for Neutron Capture Beam Characterization	\$31,805
NE118	Laser Ultrasonic Corrosion Monitor	\$353,262
NE119	Advanced Test Reactor Three Dimensional Neutronics Modeling	\$160,113
NE120	Hydrogen Production from High Temperature Nuclear Reactors	\$433,110
NE121	Laboratory Study and Model Development of Oil Shale and Other High Surface Area Sorbents for Capture of Sulfur, Chlorine, and Mercury Pollutants	\$234,687
NE125	Hydrogen Technologies	\$172,120
NE126	Hollow Waveguide Laser Ultrasonics for High Radiation Environments	\$141,616
NE127	Estimation of Neutron Irradiation-Induced Displacements-Per-Atom	\$93,412
NE128	Energy-Dispersive, X-Ray Fluorescence Excitation Source for In-Field Analysis	\$59,529
NE129	Radiation Chemistry of Supercritical Water	\$46,400
NS102	Selected Release of Polymer Degradation Agents by Photoinitiation	\$38,166
NS118	Novel Selective Matrix for Collection and Identification of Priority Pathogens	\$99,958
NS121	Imaging Applications of Photon Beams Produced with Compton Backscatter of Laser Beams	\$110,088
NS124	Microantenna Infrared Tags	\$139,834
NS125	Mechanisms of Liquid Metal Embrittlement in Steels	\$22,597
NS129	Mechanical, Physical and Metallurgical Factors Affecting Liquid-Metal Embrittlement of Steels	\$18,723
NS132	Automated Control and Electronic Signal Acquisition/processing Systems for Sprayed Distributed Sensors	\$123,232
NS133	Novel Fabrication of Blast and Penetration Resistant Materials	\$149,432
NS134	Enhanced Isotope Ratio Measurement Sensitivity	\$151,723
NS135	Smart Antenna Systems in a Wireless Local Area Network	\$256,885
NS136	Client/Server Architecture For High-Performance Computing	\$265,333
NS137	Security of Cyber Systems	\$262,558
NS138	Development of Enzyme-Activity-Based Assays for Potential Bioterrorist Agents Designed for use with Current Detection Platforms	\$94,758
NS139	Novel Threat-Risk Index Using Probabilistic Risk Assessment and Human Reliability Analysis	\$242,751

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NEEL - Idaho National Engineering and Environmental Lab

Project ID	Project Name	Total
NS140	Wireless Security Research	\$219,598
NS141	Thermomechanical Processing of Titanium 10V-2Al-3FE	\$36,119
PH101	In-situ Vadose Zone Bioremediation of Explosives	\$152,715
PH102	Characterization of Legacy Risk	\$175,626
PH103	Residual Hazards Management: Decisions Leading Toward Success or Failure?	\$162,748
PH104	Modeling an Earth Borehole System for Physical Property Determination in Shallow Subsurface Environments with Emphasis on Vadose Zone Applications.	\$127,775
PH105	Improving Soil Water Flux Estimates in the Deep Vadose Zone	\$140,030
PH106	A New Hydrogeophysical Method for Characterizing and Monitoring Preferential Flow Paths in Complex Layered and Fractured Basalt	\$134,387
PH107	Dependence of Coal Bed Permeability on Pore Pressure and Adsorbed Gas Content	\$165,180
SC111	Elucidating the Photo-Physics of Complex Metal Ions Trapped in a Fourier Transform Mass Spectrometer	\$78,828
SC112	Mechanical and Flow Properties of Dry Granular Media	\$92,965
SC115	The Controlled Synthesis, Structural, Electrical, and Optical Properties of One-Dimensional Metals	\$32,399
SC116	Supercritical Fluid Catalyst Regeneration Chemistry	\$142,517
SC117	Atmospheric Pressure Surface Analysis Mass Spectrometry	\$144,865
SC118	Surface-Sensitive Laser Acoustic Studies of Heterogeneous Catalysis	\$121,386
SC119	Development of Microelectrode Arrays for In Situ Detection of Localized Corrosion	\$148,194
SC120	Advanced Materials for Power Generation	\$98,800
ST105	Development of an Integrated Watershed Information Management Tool for Long-term Facilities Stewardship	\$230,253
ST106	Integrated Environmental Analysis: Development of Collaborative Approaches to Long Term Environmental Stewardship	\$185,915
ST107	DOE Complex - Wide Long-term Stewardship Options Analysis System	\$156,809
ST108	Long Term Record Storage for Long Term Stewardship	\$71,545
WT101	Cold-Crucible Design Parameters for Next Generation High Level Waste Melters	\$146,558
WT107	Direct Dissolution of Plutonium and Neptunium Species Using Chelated Agents in Carbon Dioxide	\$46,498
WT111	Thermodynamic Modeling of High-Ionic Non-Ideal Solutions	\$122,044

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INEEL - Idaho National Engineering and Environmental Lab

Project ID	Project Name	Total
WT112	Electrochemical Recovery of Mercury from Process Solutions	\$48,706
WT113	Highly Selective Sorbents for Removal of Arsenic from Drinking Water	\$170,362
WT114	Investigation and Modeling of Dynamic Strain Rate Effects on Structural Material Response	\$57,319
WT115	Thermally Hot Offgas Cleanup Sorbent Technology Development	\$114,235
WT116	Development of Advanced Aqueous Processing to Support the Nuclear Fuel Cycle	\$155,675
WT117	Novel Abrasion Resistant, Enhanced Flux Ultrafiltration Membranes	\$72,277
Total # of Projects for INEEL:	123	Total Cost for INEEL: \$19,613,542

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KCP - Kansas City Plant

Project ID	Project Name	Total
KC01002-(703501)	Fiber Optic Chemical Sensors	\$10,588
KC01005-(703504)	Modeling of Electromagnetic Radiation (EMR)/Electromagnetic Pulse (EMP) Proof Enclosures	\$414
KC01006-(703505)	Evaluation of Piezoelectric Actuators for Microstronglink Applications	\$56,365
KC01010-(703509)	Corrosion Evaluation of Plastic Encapsulated Microcircuits	\$67,992
KC01011-(703510)	Advanced Fiber Optic Cable Development	\$3,813
KC01012-(703511)	Massive Sensor Networks	\$1,121
KC01015-(703514)	Enhanced Sensitivity Leak Detection and Location Technology	\$2,543
KC01017-(703518)	Nano High-Voltage Components for Fireset Applications	\$54,327
KC01020-(703519)	High-Performance Insulator Development	\$16,154
KC01022-(703521)	Telemetry Mixed-Signal Integrated Circuit Development	\$1,992
KC01023-(703526)	Feasibility of Mesomachining for Miniature Parts	\$8,138
KC01025-(703533)	Enhanced Feature Recognition for Feature-Based Machining (FBMach)	\$95,778
KC02001-(703522)	Condition-Monitoring of Machinery Using Artificial Intelligence	\$42,105
KC02002-(703523)	Next Generation Processes for RF & Microwave Devices	\$143,067
KC02003-(703524)	Advanced Concepts for Material Monitoring Systems	\$11,354
KC02004-(703525)	Advanced Noncontact Inspection Techniques for Precision Dimensional Measurement	\$213,010
KC02005-(703527)	High-Voltage Cable Insulation Defect Investigation, Detection, and Analysis	\$29,334
KC02007-(703529)	Evaluate Feasibility of Using Superconducting Quantum Interference Device (SQUID) Microscope for Weld Inspection	\$95,680
KC02008-(703530)	Research and Evaluation of Controller Area Network (CAN)-based Telemetry	\$85,616
KC02009-(703531)	Software-Defined Radio Systems	\$35,347
KC02010-(703532)	Specialized Getters for Gases Other Than Hydrogen	\$65,447
KC02011-(703534)	Telemetry Optical Data Bus Development	\$76,977
KC02012-(703536)	Portable Image Recognition and Analysis	\$307,534
KC02013-(703561)	Triple Point Field Attenuation for High-Power Ceramic-to-Metal Interfaces	\$88,283
KC02024-(703535)	Evaluation of Continuous Tape Casting of Ceramic Materials for Multilayer Structures	\$75,667
KC03001-(703537)	RFID Tagging of Classified/Sensitive Material/Assets	\$225
KC03002-(703538)	Evaluate the Feasibility of a Single-Containment Vessel	\$77,246

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KCP - Kansas City Plant

Project ID	Project Name	Total
KC03003-(703539)	Suspension-Coated APO-BMI/Carbon Microsphere Molding Compound	\$52,414
KC03004-(703540)	Enhanced Hydrogen Getter Development	\$72,215
KC03005-(703541)	Integrated Miniaturized Solid-Phase Microextraction/Gas Chromatograph/Mass Spectrometer	\$82,463
KC03006-(703542)	Preservation of Digital Data with Knowledge-Based Archives	\$215,317
KC03007-(703543)	Nano-fireset Technology	\$435,372
KC03008-(703544)	Distributed Initiation Control System	\$245,577
KC03009-(703545)	High-Precision Laser Micromachining Development	\$217,664
KC03010-(703546)	Packaging of Next-Generation Laser Optics	\$77,788
KC03011-(703547)	High-g Penetrator Telemetry Electronics(703547)	\$135,573
KC03012-(703548)	Microelectronic System in a Package with High-Density Interconnections	\$151,167
KC03013-(703549)	Backend Processing of MEMS(Microelectromechanical Systems)	\$275,971
KC03014-(703550)	Wireless Sensor Transmitter	\$50,800
KC03015-(703551)	Small-Device Simulation and Modeling of High-Voltage Electromagnetic Field Enhancements, Characteristics, and Sensitivity	\$64,757
KC03016-(703552)	Photonic Crystals as Dielectric Mirrors in a Laser Cavity	\$36,181
KC03017-(703553)	Biometrics Using High-Resolution Optical Coherence Tomographic Imaging	\$105,447
KC03018-(703554)	Knowledge-Aided Sensor Signal Processing & Expert Reasoning	\$89,512
KC03019-(703555)	Investigation into Improved Techniques and Processes for Creating Small Holes (.005" Diameter) to Closer Location and Size Tolerances	\$27,645
KC03020-(703556)	Integrated Data Collection and Replication (IDC&R)	\$161,455
KC03021-(703559)	Finite Element Modeling of Fiber Reinforced Composite Structures	\$46,538
KC03022-703558	Optimal Resource Allocation using Fuzzy Logic & Neural Nets for the Flexible Manufacturing System	\$68,782
KC03024-(703560)	Digitization of Reservoir Process Design and Machine Program Generation	\$179,171
KC03026-(703562)	Relaxor and Antiferroelectric Material Development For High Energy Capacitors	\$142,993
KC03027-(703563)	High Power Ceramic Structure Machining and Characterization	\$744,128
KC03028-(703564)	Military GPS Receiver Design	\$18,473
Total # of Projects for KCP:	51	Total Cost for KCP: \$5,363,520

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LANL - Los Alamos National Lab

Project ID	Project Name	Total
LANL-2000510DR	A Scaleable Silicon-based Nuclear Spin Quantum Computer	\$490,277
LANL-2001001ER	Coherent Femtosecond Pulse Propagation in Photonic Crystal Waveguides	\$200,240
LANL-2001002ER	Principles of Optical Amplification and Lasing in Quantum-Dot Media	\$210,065
LANL-2001003ER	Triplet Excitons in High Efficiency Organic Light-Emitting Diodes	\$213,095
LANL-2001004ER	Understanding Low Pressure Electronegative Discharge Instabilities	\$144,311
LANL-2001011ER	Optical Studies of Neural Function in Early Vision: Dynamic Imaging and Characterization of Intrinsic Responses	\$170,103
LANL-2001012ER	Rapid, Ultrasensitive Haplotyping of Unamplified Genomic DNA	\$198,626
LANL-2001013ER	Exploring How Hydrophobic Interactions Control the Energy Landscape of Proteins	\$162,842
LANL-2001014ER	Following the Evolution of HIV	\$168,704
LANL-2001015ER	Algorithms for Analysis of Protein-DNA Binding Interactions	\$162,942
LANL-2001021ER	Improving Stereoselective Processes: Generation of Novel Catalytic Selenium-Containing Chiral Complexes	\$225,272
LANL-2001022ER	New Entries to Fluorinated Ligands and Their Application Towards New Fluorinated Materials	\$250,548
LANL-2001023ER	New Challenges in Multiple Bonding Between Lanthanides and Main Group Elements	\$371,007
LANL-2001024ER	Controlled Synthesis of High Performance Nonlinear Optical Solids via Ionic Self-Assembly	\$271,694
LANL-2001031ER	Smart Routers for Distributed Computational Grids	\$169,918
LANL-2001033ER	Algorithms for Support Vector Machines	\$147,899
LANL-2001034ER	Resource Utilization and Parallel Program Development with Buffered Coscheduling	\$126,663
LANL-2001041ER	Integrated Micro-optical Devices for High-speed Data Storage, Communications, and Remote Sensor Applications	\$215,989
LANL-2001051ER	Search for Tectonic Sources of the Lunar Atmosphere	\$122,030
LANL-2001052ER	New Coupled Dynamical-Microphysical Model for Forecasting the Intensification of Hurricanes	\$145,156
LANL-2001053ER	The Origin of Ultra High Energy Cosmic Rays	\$150,900
LANL-2001054ER	Building a Foundation for Global Remote Sensing of Magnetospheric Plasmas	\$185,823
LANL-2001061ER	Magnetization and Fluorescence Measurements of Particles in Flowing Streams	\$219,267
LANL-2001062ER	Flow Sorting Microscope for Spatial Genomics	\$252,458

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LANL - Los Alamos National Lab

Project ID	Project Name	Total
LANL-2001063ER	Adaptive Picosecond Laser Ultrasonics	\$28,956
LANL-2001064ER	Organic Thin Film Transistor Sensors	\$235,221
LANL-2001071ER	Atomic Structure Studies of Materials Undergoing Phase Transitions Under Applied Pressure	\$247,949
LANL-2001072ER	Smart Nano-Crystalline Polymers	\$243,015
LANL-2001073ER	New Electronic States in Quasi-2D Intermetallics	\$250,771
LANL-2001074ER	Carrier Dynamics Across the Metal Insulator Transition	\$209,652
LANL-2001082ER	Synchronization of Spiking Neurons: A Functional Model for the Real-Time Segmentation of Natural Scenes	\$158,472
LANL-2001083ER	Asymptotically Preserving Methods for Hyperbolic Systems with Stiff Relaxation	\$93,202
LANL-2001084ER	Efficient Solution of Mixed Discretizations for Diffusion Problems	\$174,419
LANL-2001085ER	Modeling the Dynamics of Quantum Computation for a Large Number of Qubits in Nano-Scale Solid State Quantum Computers	\$173,581
LANL-2001091ER	Neutrino Production and Propagation in Astrophysical Environments	\$147,115
LANL-2001092ER	Theory, Phenomenology and Cosmology of Models with Extra Dimensions	\$138,999
LANL-2001093ER	Measurement of Neutron Cross Sections for Unstable Nuclei of Interest to S-Process Nucleosynthesis	\$135,372
LANL-2001094ER	Studies of Neutrino Interactions and Oscillations at GeV Energies	\$181,359
LANL-2001095ER	Innovative Detectors for the Search for the Z' Meson	\$197,888
LANL-2001096ER	Implications of QCD on Signatures of the Quark-Gluon Plasma at RHIC	\$193,631
LANL-2001101ER	Synthesis of new ternary phases in the superhard B-C-N System by laser-induced deposition	\$98,624
LANL-2001104ER	Quantum Enabled Science and Technology	\$506,450
LANL-2001105ER	Multiscale Material Interfaces	\$302,663
LANL-2001106ER	Revolutionary Approaches to Knowledge Derivation from Large Data Sets	\$350,188
LANL-2001109ER	Statistical Physics of Fiber Optics Communications	\$298,641
LANL-2001210ER	The Contour Method for Residual Stress Mapping	\$193,259
LANL-2001222ER	STM Electron Spin Precession Detection for Fundamental Physics and Nanotechnology	\$501,344
LANL-2001511DR	Development of High Performance Cold Neutron Spectroscopy at LANSCE	\$1,434,871
LANL-2001512DR	Advanced Experimental Characterization of Fluid Instability and Turbulence	\$968,525
LANL-2001513DR	Superconductivity and Emergent Behavior in Correlated Electron Materials	\$613,010

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LANL - Los Alamos National Lab

Project ID	Project Name	Total
LANL-2001514DR	Thermodynamics of Plutonium	\$1,190,154
LANL-2001515DR	Understanding and Controlling Charge Transfer Across Classes of Mixed-Valence Materials	\$980,893
LANL-2001516DR	Toward a First-Principles Understanding of Plutonium	\$1,003,770
LANL-2001517DR	Early Diagnosis of Infection	\$1,220,241
LANL-2001518DR	Alpha Models: A Unique Opportunity in Fundamental Fluid Turbulence	\$517,910
LANL-2001519DR	Modeling Complex Biological Systems: From Gene Dynamics to the Immune System	\$1,378,815
LANL-2001520DR	Real-Time Transient Detection and its Application in Astrophysics	\$854,472
LANL-2001521DR	Fundamental Electronic Interactions on Nanometer Lengthscales	\$695,096
LANL-2001523DR	Microfluidic Devices for Protein Evolution and Expression	\$805,992
LANL-2001526DR	Electric Dipole Moment of the Neutron	\$1,730,538
LANL-2001531DR	Measurement and Analysis of Single Protein Molecule Folding Events	\$1,048,106
LANL-2001532DR	Innovative Approaches for Nonlinearly Consistent, Multiple Time Scale, Computational Physics	\$1,134,935
LANL-2001553DR	Physics Issues in Proton Radiography	\$1,353,493
LANL-2001554DR	Development of an Integrated Influenza Early Warning System	\$1,157,711
LANL-2001555DR	Sustainable Hydrology	\$458,125
LANL-2001601DR	Dynamic Mix Studies with Proton Radiography (U)	\$396,762
LANL-2001602DR	Optical Interferometry for Astronomy	\$336,344
LANL-2001606DR	Scientific Opportunities With High Intensity Pulsed Cold and Ultra-Cold Neutron Sources	\$897,396
LANL-2001607DR	Research to Support Simulation of Complex Biological Systems	\$677,727
LANL-2001609DR	Performance Analysis and Modeling of Extreme-Scale Parallel Architectures	\$465,202
LANL-2001926ER	Plasma Generation of Nanoparticles	\$208,000
LANL-2001929ER	Study of Geometrically Frustrated Magnets and Underconstrained Lattices	\$397,727
LANL-2001930ER	Development of a Strength Model for Silica-Filled Polydimethylsiloxane: a Combined Theory and Experimental Approach	\$209,486
LANL-2001938DR	An Operating System for Scientific Computing	\$244,989
LANL-20020003DR	Nuclear Isomer Physics	\$1,290,615
LANL-20020006ER	Unstable Fluid-Fluid Interfaces	\$204,617

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LANL - Los Alamos National Lab

Project ID	Project Name	Total
LANL-20020007ER	Quantum Dynamics and the Quantum-Classical Transition with Entangled Spinor Wavepackets	\$142,836
LANL-20020008ER	Mobility and Integrity of the Bacterial Chromosomal Gene Pool	\$213,910
LANL-20020009ER	Cooling and Trapping Molecules with Laser Light	\$385,496
LANL-20020010ER	Macroscopic Matter Wave Dynamics	\$151,679
LANL-20020011ER	Unlocking the Mechanism of Protein Biosynthesis: Computational Investigation of the Ribosomal Functional Complex	\$181,939
LANL-20020012ER	Protein Machines: Regulation of Enzyme Function Through Substrate and Protein Interactions	\$147,758
LANL-20020014ER	Chemistry of the f-Block Elements in Room Temperature Ionic Liquids	\$233,202
LANL-20020015ER	Quantum Wavepacket Dynamics with Trajectories	\$198,939
LANL-20020016ER	New Catalysts Containing Phosphonium Groups for Chemical Conversions	\$409,383
LANL-20020017ER	Excited States Dynamics and Photochemical Reactions in Large Molecular Systems	\$220,018
LANL-20020018ER	Polymeric Chelators for Radioisotope Delivery Systems	\$224,871
LANL-20020019ER	Advanced techniques in Discrete Simulation	\$221,703
LANL-20020020ER	Estimating the Bayes Error from Empirical Data	\$206,007
LANL-20020021ER	Identification of Interests, Trends and Dynamics in Document Networks	\$105,444
LANL-20020022ER	Distributed Sensor Networks with Collective Computation for In-Situ Sensing	\$201,991
LANL-20020023ER	Enabling Energy & Environmental Security: Chemical Extraction of Carbon dioxide from air	\$252,902
LANL-20020024ER	Bone Morphogenesis and Regulation by External Fields	\$157,285
LANL-20020025ER	Hydrogen Generation for Fuel Cells by Solid-Electrolyte Membrane Partial Oxidation Reactor	\$217,852
LANL-20020026ER	Time Reversed Acoustics Applied to the Earth	\$214,862
LANL-20020027ER	General Relativistic Astrophysics of Compact Sources: Core-Collapse Supernovae and Gamma-Ray Bursts	\$249,020
LANL-20020028ER	Photon-Counting Optical Spectrophotometry: Opening a New Window for Discovery in Astrophysics	\$307,548
LANL-20020029ER	Radio emissions from cosmic-ray/atmosphere interactions	\$183,715
LANL-20020030ER	Ultrafast Broadband Optical Spectrometer for Dynamic Materials Characterization in a Magnetic Field	\$200,791
LANL-20020031ER	Real-time Localization and Presentation of Neural Activity	\$269,144
LANL-20020032ER	Vibration-free Cooling for Precision Cryogenic Measurements	\$255,238

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LANL - Los Alamos National Lab

Project ID	Project Name	Total
LANL-20020033ER	Single-Domain Nanomagnets: Fabrication and studies through the superparamagnetic transition	\$244,898
LANL-20020034ER	Nanostructured Metals with Unusually High Fatigue Strengths	\$221,136
LANL-20020035ER	New Vortex Phases in Layered Magnetic Superconductors	\$178,414
LANL-20020036ER	Low Temperature Solid Solution Softening in Ordered Intermetallic Alloys - Towards Improvement of Ductility in High Temperature Materials	\$205,198
LANL-20020037ER	Algebraic Approach to Interacting Quantum Systems	\$180,457
LANL-20020038ER	Eliminating Short Time-Scales in Long-term, High-resolution Studies of Ocean Circulation: A First in Climate Modeling	\$162,049
LANL-20020039ER	Statistical Properties of Granular Chains	\$172,774
LANL-20020040ER	Implicit Subgrid Turbulence Modeling	\$146,974
LANL-20020041ER	Development of an Experiment to Measure Neutron Beta Decay Parameters with a Polarized Cold Neutron Beam	\$219,841
LANL-20020042ER	The Electric Dipole Moments and Time Reversal Violation in Low Energy Processes	\$273,050
LANL-20020043ER	Study of Open-Charmed Production at Rhic	\$239,465
LANL-20020046DR	Understanding Protein Function: From Chemical Reaction to Molecular Recognition	\$975,384
LANL-20020047DR	Electronic Devices Based on Nano-cell Organic Crystals	\$969,084
LANL-20020048DR	Bringing Genomes to Life with Phage Antibodies and Mass Spectrometry	\$1,001,877
LANL-20020050DR	Beryllium Chemistry: Toward an understanding of Chronic Beryllium Disease	\$1,103,040
LANL-20020051DR	Life Cycles of Active Galaxies	\$898,562
LANL-20020052DR	Applied Quantum Technologies	\$1,507,831
LANL-20020053DR	Probing the Structural Dynamics of Condensed Matter with Ultrafast X-ray Diffraction	\$1,088,924
LANL-20020054DR	Machine Learning for Real-World Data Analysis	\$869,997
LANL-20020055DR	New Windows into Shocks at the Mesoscopic Scale	\$1,068,433
LANL-20020058ER	Multi-scale Modeling and Simulation in Scientific Inference: Hierarchical Methods for Parameter Estimation in Porous Flow	\$108,293
LANL-20020064DR	Interacting Complex Systems	\$1,215,517
LANL-20020065DR	Developing a Scientific Basis for Detecting Life Across the Solar System	\$832,621
LANL-20020068DR	Zero Emission Coal	\$999,730
LANL-20020071DR	Damage Prognosis Solutions	\$504,137

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LANL - Los Alamos National Lab

Project ID	Project Name	Total
LANL-20020072DR	Experimental Investigation of Fundamental Processes Relevant to Fusion Burning, Strongly Coupled, Multi-Material Plasmas	\$1,057,375
LANL-20020073DR	Advanced Arbitrary Lagrangian-Eulerian Methods for Complex Flows in Weapons	\$487,832
LANL-20020076PRD	Theory of Quantum Information Processing	\$80,168
LANL-20020077PRD	Consequences of Competing Interactions on Quantum Phase Transitions in Many-Particle Systems	\$116,196
LANL-20020078PRD	Investigating the Kinetics of Free Radical Photo-Polymerizations for Nano-Scale Systems	\$97,907
LANL-20020081PRD	Protein Dynamics/Multidimensional Spectroscopy	\$101,898
LANL-20020084PRD	Elementary Particle Theory, General Relativity and String Theory	\$35,470
LANL-20020088PRD	Electron Relaxation Dynamics of Strongly Correlated Systems via Femtosecond Spectroscopy	\$25,919
LANL-20020090PRD	Investigation and Control of Ultrashort Pulse Dynamics in Photonic Crystal Structures	\$56,397
LANL-20020091PRD	Modeling and Simulation of Cell Signaling Cascades Using Differential Equations and Monte Carlo Methods	\$71,973
LANL-20020095PRD	Relaxation Phenomena in Non-Equilibrium, Disordered, Strongly Coupled Systems	\$64,420
LANL-20020097PRD	Functionalized Water-Soluble Polymers for Technetium Complexation	\$47,548
LANL-20020101PRD	Thermal Modeling of Cloud-Radiation-Surface Interactions in the Turbulent Boundary Layer	\$98,500
LANL-20020103PRD	Ion-Cutting and Bonding of Silicon	\$89,565
LANL-20020104PRD	Applications of OSL Dating to Fluvial Sediment Transport Research	\$73,906
LANL-20020105PRD	Investigation of Nano-precipitates in Magnesium Diboride Superconductor Using Transmission Electron Microscopy (TEM)	\$50,390
LANL-20020106PRD	Ultrafast Time-Resolved Terahertz Cyclotron Resonance/Hall Effect Spectroscopy	\$110,845
LANL-20020108PRD	The Thermodynamics and Physics of f-Electron Bonded Metals and Alloys	\$29,957
LANL-20020111PRD	Simulation of Self-Reproducing Molecular Systems	\$1,856
LANL-20020112PRD	Plasma Instabilities in Astrophysical Accretion Disks	\$35,973
LANL-20020113PRD	Computational and Theoretical Biophysics. Folding Simulation of Atomic Models of Proteins	\$59,979
LANL-20020114PRD	Adaptive Ultrafast Optical Pulse Shaping	\$20,761
LANL-20020116PRD	Chemistry of Quantum Dot Assemblies	\$46,069

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LANL - Los Alamos National Lab

Project ID	Project Name	Total
LANL-20020121PRD	Interaction and Scattering of Coherent Structures and Their Role in Fully Developed Turbulence	\$20,571
LANL-20020123PRD	Atom-Trap Superfluidity	\$80,353
LANL-20020128PRD	Condensed Matter Physics/Theory of Magnetic Resonance Force Microscopy/Theory of Impurities in Correlated Systems	\$67,577
LANL-20020132PRD	Effects of atomic arrangements and defects on material properties	\$51,957
LANL-20020133PRD	Biocatalysis using Ionic Liquids as Solvent	\$26,036
LANL-20020134PRD	Spectroscopic Investigation of Molecular Interactions in Dye-Sensitized Solar Cells	\$90,161
LANL-20020135PRD	Low Temperature Spectroscopic Studies of Individual Nanocrystals	\$92,757
LANL-20020136PRD	Sensors for Siderophores Based on Pheromone Detection	\$91,343
LANL-20020137PRD	Role of Water in Self-Assembled Structural Stability	\$85,621
LANL-20020138PRD	Quantify the Relationship between the Nature of Structural Defects, the Defect Density, and the Hydration State of Clay Minerals and their Interaction with Fluids	\$82,706
LANL-20020140ER	Theory of Isotope Effects in Recombination Reactions	\$164,769
LANL-20020141PRD	Transition Metal Catalysts for Organic Compounds	\$91,325
LANL-20020143PRD	Quantum Control in Atom Optics	\$93,812
LANL-20020161PRD1	Tools for Realizable Quantum Information Processing	\$105,030
LANL-20020167PRD1	Solid State Systems for Electric Dipole Moment Searches	\$95,203
LANL-20020171PRD1	High Pressure Synthesis and Characterization of Clathrates	\$131,707
LANL-20020183PRD1	Search for Quantum Critical Points using High Magnetic Fields	\$99,841
LANL-20020194PRD1	Fracture and Crack Growth Behavior in Nanostructured Materials Under Cyclic Loading	\$88,864
LANL-20020198PRD1	Arid Land Soil Microbial Processes and Communities	\$91,080
LANL-20020202PRD1	The Origin of Elastic Nonlinear Response	\$92,806
LANL-20020205DR	Advanced Linux for High Performance Computing	\$451,503
LANL-20020206ER	Exploratory Synthesis of Correlated Electron Materials	\$252,276
LANL-20020222ER	Energy Conversion and Photonics Based on Metal Complex Excited States	\$367,082
LANL-20020225ER	Interfacial Solutions: Quasiliquids and Tropospheric Chemistry	\$80,253
LANL-20020252PRD2	Interface-Controlled Deformation Physics of Nanolayered Metals	\$92,833
LANL-20020263PRD2	Neutron Capture for Understanding Astrophysical Nucleosynthesis	\$78,966

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LANL - Los Alamos National Lab

Project ID	Project Name	Total
LANL-20020285ER	Carbon Management Through Iron Fertilization: Studies in Los Alamos Ocean Models	\$49,995
LANL-20020288PRD2	Chemical Tuning and Disorder in Quantum-Critical Superconductors	\$92,130
LANL-20020299PRD2	Neutron Scattering Study on Quantum Magnetism in Correlated Electron Materials	\$101,212
LANL-20020304PRD2	Ultrafast Studies of Dynamics in Condensed Matter Systems	\$93,749
LANL-20020320ER	Wave Reflections in the Cochlea	\$256,145
LANL-20020360ER	New Modeling Techniques for Strongly-Coupled Atmospheric Processes that Occur in Wildland Fires	\$150,850
LANL-20020364ER	Development of Flow Cytometry-Based Protease Model Systems	\$49,987
LANL-20020387PRD3	Quantum State Engineering and Macroscopic Quantum Coherence in Superconducting Mesoscopic Systems	\$4,511
LANL-20020393PRD3	Synthesis and Characterization of Nanomaterials	\$73,534
LANL-20020396PRD3	Long-time dynamics of floppy systems	\$93,090
LANL-20020399PRD3	Crystallization Mechanism in Metal-Oxide Thin Films	\$95,564
LANL-20020407ER	Knowledge Systems for Decision Making	\$74,787
LANL-20020417PRD3	Electron Microscopy Study of Defects at Interfaces in Nano-Scale Films	\$99,772
LANL-20020420PRD3	Numerical determinations of viscoelastic effect on volcanic deformation: a tool for eruption prediction	\$96,388
LANL-20020421PRD3	Dynamics of Granular Media	\$92,658
LANL-20020458ER	Analysis of Bacillus anthracis Gene Expression	\$172,999
LANL-20020459ER	Ultrahigh Weight Biomolecule Separation and Detection	\$227,861
LANL-20020460ER	Stroboscopic studies of Polymer Dynamic Response to Stress	\$136,399
LANL-20020461ER	Long Pulse Neutron Spallation Demonstration	\$99,679
LANL-20020462ER	Synthesis, Characterization, and Modelling of Nanoporous Hybrid Materials	\$173,006
LANL-20020463ER	Nanochemistry of Catalysts	\$137,079
LANL-20020464ER	Towards a Fundamental Understanding of Lung Surfactant Properties	\$141,989
LANL-20020468ER	Advanced Nuclear Fuel Cycle Studies	\$240,198
LANL-20020476PRD4	SWNTs for Chemical/Biochemical Detection and Threat Reduction	\$52,389
LANL-20020494PRD4	Preparation and Characterization of Monodisperse Semiconductor Quantum Dots: Towards True Artificial Atoms	\$92,037
LANL-20020505PRD4	The Effect of Forest Disturbance and Climate Change on the Isotopic Composition of Tree Rings and Respired Carbon Dioxide	\$61,094

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LANL - Los Alamos National Lab

Project ID	Project Name	Total
LANL-20020517PRD4	The Synthesis of Metal Complexes containing Actinide-Transition Metal and Actinide-Actinide Metal Bonds	\$74,337
LANL-20020521PRD4	Novel structures based on multicompartment self-assembly of fluoro/hydro-carbon surfactants	\$93,667
LANL-20020525PRD4	Electronic Pumping of Nanocrystalline Quantum Dots	\$84,891
LANL-20020529PRD4	Advanced Computational methods in Mobile Computing and Computational Biology	\$84,009
LANL-20030022DR	Novel Physical Behavior of Nanostructured Materials Derived from Interface Atoms	\$1,180,178
LANL-20030029DR	Structural Bioinformatics: Inferring protein function from sequence and structure on a genomic scale	\$1,250,292
LANL-20030030DR	Neutrino Physics and Fundamental Symmetries	\$1,364,975
LANL-20030036DR	New States of Matter near Zero-Temperature Phase Transitions	\$1,620,587
LANL-20030037DR	Physics-Based Analysis of Dynamic Experimentation and Simulation	\$1,182,780
LANL-20030038DR	Stochastic Closure for Multi-Scale Simulations	\$255,820
LANL-20030050DR	Scaling Relationships in Biology: Developing and Applying a Unifying Theory from Molecular through Biosphere Scales	\$1,479,768
LANL-20030059DR	Clathrate Hydrate Science and Technology	\$1,326,775
LANL-20030067DR	Water on Mars	\$987,834
LANL-20030068DR	Non-equilibrium Electron Spin Transport and Dynamics in Solids	\$1,436,686
LANL-20030069DR	Interfacial Energy and Charge Transfer in Multifunctional Bio-Inspired Nano-Assemblies	\$1,152,415
LANL-20030084DR	Quasiparticles and phase transitions in high magnetic fields: critical tests of our understanding of Plutonium	\$1,523,350
LANL-20030091DR	Actinide Partitioning at Solid-Solution Interfaces	\$1,192,403
LANL-20030119ER	Synthesis of Labeled Glycosaminoglycans for Structural and Dynamical Studies of Macromolecular Complexes	\$231,160
LANL-20030129ER	Collisionless Magnetic Reconnection in 3D Geometries	\$211,920
LANL-20030137ER	Improving Local Search	\$236,875
LANL-20030138ER	Computational Study of Intense Short-Pulse Laser-Matter Interactions	\$248,149
LANL-20030151ER	Calculating the kaon bag parameter B_K on unquenched lattices	\$263,405
LANL-20030162ER	Automatic Detection of Salient Objects in Real-world Imagery	\$78,620

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LANL - Los Alamos National Lab

Project ID	Project Name	Total
LANL-20030169ER	Determining Fundamental Roles of Magnetic Field in the Universe: Laboratory plasma flow experiments on Magneto-rotational Instability (MRI) and laminar plasma dynamo	\$297,242
LANL-20030179ER	Bacillus Anthracis Iron Acquisition	\$290,286
LANL-20030181ER	Efficient Computation of Free Energy Differences Relevant to Rational Drug Design	\$215,651
LANL-20030210ER	Regularized Line Vortices of the Lagrangian-Averaged Euler Equations	\$242,102
LANL-20030216ER	Strong Ultrafine Grain Metals by Severe Plastic Deformation and Strain Path Changes: Application to Beryllium (Be)	\$252,129
LANL-20030225ER	Processor-Coupled Computing Fabric	\$257,867
LANL-20030227ER	Estimation of Aquifer Recharge Using Time-Lapse Gravity Surveys	\$228,964
LANL-20030232ER	Catalysis by Artificial Inorganic Enzymes	\$266,661
LANL-20030248ER	Distributed Multi-scale Markov Chain Monte Carlo for uncertainty quantification in inverse problems	\$184,639
LANL-20030251ER	Using Neutrons to Explore Peculiar elastic Behavior of Rocks	\$178,303
LANL-20030258ER	Immune Cell-Based Biosensor for Rapid Pathogen Detection and Identification	\$272,744
LANL-20030261ER	Transport studies of inhomogeneous superconducting vortex motion in confined geometries	\$183,875
LANL-20030292ER	Synthesis and Characterization of Selective Ligands	\$342,574
LANL-20030301ER	Magnetocarcinotherapy: A Novel Molecular Imaging Diagnostic and Treatment Method for Cancers	\$274,634
LANL-20030310ER	Polymer-Assisted Aqueous Deposition (PAAD) of Metal-Oxide Films	\$286,074
LANL-20030317ER	Three Dimensional Effects in Core-Collapse Supernovae: Rotation, Convection and Neutron Star Kicks	\$336,283
LANL-20030342ER	Waveguide interferometry with Bose-Einstein condensates	\$380,243
LANL-20030351ER	Computational Schemes for Multiscale Modeling of Polymers	\$223,107
LANL-20030352ER	Double Beta Decay	\$390,043
LANL-20030355ER	Thin-film Semiconductor Sensors on Polycrystalline Substrates	\$255,569
LANL-20030356ER	An Integrated Microarray-based Platform for Sensitive High-throughput Pathogen Detection and Identification	\$329,315
LANL-20030359ER	Electrically Pumped Colloidal Nanoemitters: Combining Top-Down and Bottom-Up Approaches in Nanoscale Engineering	\$160,161
LANL-20030360ER	Viral Invasion: Breaching the Cells Outer Defenses	\$289,862
LANL-20030363ER	Testing for a Relativistic Symmetry in the Nucleon-nucleon Interaction	\$138,196

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LANL - Los Alamos National Lab

Project ID	Project Name	Total
LANL-20030365ER	Cosmological Vacuum Energy	\$147,690
LANL-20030398ER	Desalination by Molecular Design	\$228,602
LANL-20030400ER	Atomic Level Engineering of Nanostructures and Devices	\$246,934
LANL-20030419DR	Assembly and Actuation of Nanomaterials Using Active Biomolecules	\$361,779
LANL-20030420DR	Active Photonic Nanostructures	\$870,663
LANL-20030486DR	Astrophysical Survey Science and Technology	\$439,719
LANL-20030487DR	Physics of Information	\$1,004,273
LANL-20030488ER	Formation and Distribution of Galaxies: An Advanced Computational Approach	\$325,041
LANL-20030489DR	Advanced Diagnostics for Characterizing Nanoscale Materials	\$1,002,550
LANL-20030494ER	Design of the Next Generation Ground-Based Gamma-Ray Burst Detector	\$97,537
LANL-20030497PRD1	Analysis and Generation of Magnetic Flux Pinning Sites in YBa ₂ Cu ₃ O _{7-d} Films	\$71,093
LANL-20030508ER	Mass Spectrometry and Systems Biology Based Approach for Identifying Biomarkers in Cancers	\$249,878
LANL-20030517ER	Development of Microfluidics Analytical Platform for On-chip Genetic Assays	\$184,901
LANL-20030519PRD1	Solid-State Actinide Chemistry	\$70,786
LANL-20030522PRD1	Searching for Superhard Materials from Nanometric Scale and at Extreme Conditions	\$80,607
LANL-20030526PRD1	Identification of the Energy Gap in the 2D Metallic State of Strongly Interacting Fermions	\$7,842
LANL-20030534PRD1	Genomic Instability and Mammalian Aging	\$3,116
LANL-20030544PRD1	Ultracold Collisions of Charged Particles	\$33,458
LANL-20030549PRD1	Physics of Metallo-Organic / Organic Materials and Devices	\$36,913
LANL-20030558ER	New Strategies for Enhancing the Reactivity of Organo-f-Element Complexes	\$190,370
LANL-20030562PRD1	Synthesis of Continuous Carbon Nanotubes	\$43,695
LANL-20030568PRD1	Interaction of magnetism and superconductivity in novel superconductors	\$94,250
LANL-20030579PRD1	Cosmic Cinematography: Opening a New Window for Discovery in Astrophysics	\$91,184
LANL-20030596ER	Rare event statistics and scaling in systems far from equilibrium	\$102,497
LANL-20030597ER	LOFAR - A Low Frequency Radio Interferometer for Astronomy and Space Sciences	\$51,914
LANL-20030603ER	Experimental Efforts Towards a Test of Fine Structure Constant Variation	\$521,234

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LANL - Los Alamos National Lab

Project ID	Project Name	Total
LANL-20030604ER	Preparation & Characterization of Inorganic & Organic High-Nitrogen Energetic Materials	\$43,505
LANL-20030611PRD2	Active Photonic Structures Based on Semiconductor Nanocrystals	\$59,035
LANL-20030619ER	Study of Dielectric Properties of Liquid Helium	\$72,044
LANL-20030620ER	Acoustic Streaming in Thermoacoustic Devices	\$170,048
LANL-20030622ER	Complex Dynamical Earth Systems	\$188,492
LANL-20030623ER	Space Weather Foundations	\$57,269
LANL-20030624ER	Dynamical Astrophysics	\$266,433
LANL-20030625ER	Planetary Geophysics-Core to Crust	\$398,767
LANL-20030635PRD2	Theoretical and computational studies of the stability of closed magnetic fieldline systems	\$23,745
LANL-20030637PRD2	Global 3-D magnetospheric structure	\$22,139
LANL-20030642PRD2	Superheating upon superfast dynamic loading	\$27,484
LANL-20030643PRD2	Theoretical studies of excited states in transition metal derivatized polymers	\$24,640
LANL-20030663PRD2	Electric Field Control of Optical and Electronic Properties of Semiconductor Quantum Dots	\$34,597
LANL-20030664ER	Compton Enhanced Gamma Reconstruction	\$51,966
LANL-20030671ER	New Directions in Catalysis	\$47,417
LANL-20030672ER	Novel Optical Processing Methods	\$49,125
LANL-20030680PRD2	Pattern formation and dynamics in systems with competing forces	\$10,529
LANL-20030699PRD3	Trace-Level Analysis of Actinides Using Membrane-Based Ion-Selective Chemical Sensors	\$28,968
LANL-20030718PRD3	Neutrino Physics, Astrophysics and Cosmology	\$1,655
LANL-20030744PRD3	Investigation of electrical properties of BST multilayers for applications in tunable microwave devices	\$5,919
LANL-20030760ER	Selection of binding agents against SARS proteins for diagnosis and therapy	\$63,891
LANL-20030766PRD3	Development of Self-Monitoring and Self-Repairing Structural Systems using Smart Materials	\$41,964
LANL-20030782ER	Feasibility Study: Using Background Radiation for Radiography	\$65,492
LANL-20030839ER	Proteins in Protein Networks	\$143,470
LANL-20040261ER	Nonequilibrium Mechanics of Geomaterials	\$55,365

Total # of Projects for LANL:	299	Total Cost for LANL:	\$96,089,684
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LBNL - L. Berkeley National Lab

Project ID	Project Name	Total
LB01002	Advanced Simulation of Complex Beam Systems	\$74,950
LB01003	An Ultra-Fast X-Ray Source for fsec Dynamics	\$499,921
LB01010	Development of a Neutral Molecule Synchrotron Storage Ring	\$149,759
LB01011	Photoionization Experiments on Atoms and Molecules Adsorbed onto Helium Droplets	\$109,801
LB01012	Nonlinear Mathematical Models of Phenomena Related to Petroleum Mining and Geological Engineering	\$79,217
LB01016	Second-Order Methods for Solid-Fluid Shock Coupling with Application to Martian Meteorites	\$49,707
LB01024	Dynamic Reorganization of Chromosome Architecture During Meiosis	\$199,975
LB01032	Design of Digital Signal Processing Electronics for High Resolution Solid State Detectors	\$150,142
LB01034	Molecular Recognition and Protein/Protein Interactions in Signal Transduction	\$100,041
LB01037	Modeling of High Energy Physics Detectors	\$99,799
LB01038	POLARBEAR: An Experiment to Measure Polarization Anisotropy in the Cosmic Microwave Background	\$100,108
LB02001	Novel Coherent Terahertz and Infrared Source using a Laser Wakefield Accelerator and Applications	\$239,295
LB02002	Solid-State Quantum Computer Development with Single Ion Implantation	\$248,088
LB02003	Synchrotron and Wiggler Radiation Measurement of the Longitudinal Bunch Distribution in Hadron Colliders	\$174,697
LB02004	Development of a Coherent Far-Infrared Synchrotron Radiation Source at the Advanced Light Source	\$279,678
LB02006	Simulations of Femtosecond X-Ray Spectra of Photoexcited Molecules	\$74,944
LB02007	Picosecond Time-Resolved Photo-Electron Emission Microscopy (PEEM) on Magnetic Nano-Structures	\$75,157
LB02008	Bonding in Low-Dimensional Structures: Theory and Computation	\$75,120
LB02009	Disorder and Multiple Length Scales in Non-Fermi Liquid f-electron Intermetallics	\$80,419
LB02010	Investigation of Charge Transfer in Organic Electronics using Ultrafast Spectroscopy and Targeted Synthesis	\$174,650
LB02012	Experimental Mathematician's Toolkit	\$74,532
LB02013	Infrastructure for Improving Protein Structure Predication in Computational Biology	\$119,530

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LBNL - L. Berkeley National Lab

Project ID	Project Name	Total
LB02014	New Machine Learning and Data Mining Methods for Genomics and Information Retrieval	\$99,576
LB02015	Numerical Simulation of Fuel Cells	\$124,578
LB02017	Segmentation of Mammary Gland Ductal Structure Using Geometric Methods	\$89,465
LB02018	Combinatorial Algorithms in Scientific Computing	\$99,113
LB02019	Scalable Methods for Studying Collisional Breakup and Rearrangement Processes	\$226,583
LB02020	Microbial Controls on Metals in the Environment	\$149,999
LB02023	Coupling of Seismologic and Hydrologic Processes	\$45,273
LB02024	Development of Monitoring Strategies for Carbon Sequestration Verification Using Coupled Subsurface and Subaerial Simulation	\$99,947
LB02025	Applying a Coupled Climate-Land Surface Regional Model to Deduce Trends in Soil Moisture from Air Temperature Data	\$149,710
LB02026	Reactivity of Nanoparticles in Natural Environments	\$150,000
LB02028	Miniaturized Systems for Particle Exposure Assessment	\$99,712
LB02029	Health Effects of Indoor and Outdoor Particle Concentrations, Assessed with Epidemiology and Molecular Biology	\$99,688
LB02030	Structural Studies of Presenilin-1, a Membrane Protein Critical to the Onset of Alzheimer's Disease	\$44,997
LB02031	Systems Biology: Biological Input-Output Devices	\$199,957
LB02033	Nanoscale Electronic Phase Separation: A New Paradigm for Complex Electronic Materials	\$100,381
LB02034	Self-Assembling Arrays of Nanocrystals Templated by Cytoskeletal Proteins	\$94,005
LB02036	Photoemission Study of Magnetic Quantum Well Interaction	\$89,290
LB02039	Effective Field Theory and Few-Nucleon Systems	\$99,965
LB02040	Allosteric Mechanisms in Protein Kinases	\$125,621
LB02041	Structure and Functional Characterization of Heme Protein Sensors	\$100,082
LB02042	Development of Techniques for Structural Analysis of Large, Multi-Subunit Eukaryotic Transcription Complexes	\$100,085
LB02043	Coherent Control and Quantum Information in Polyatomic Molecules	\$201,378
LB02044	Scientific Investigations and Technique Development of Wet Spectroscopy, High-Pressure Photoelectron Spectroscopy, and Scanning Transmission X-ray Microscopy for Molecular Environmental Science	\$134,794
LB02045	Parallel Methods for Robust Optimization and Uncertainty Quantification	\$129,729

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LBNL - L. Berkeley National Lab

Project ID	Project Name	Total
LB02047	Detector Research and Development for Low Energy Solar Neutrino Detectors	\$100,015
LB02048	Research on a Next Generation Vertex Detector	\$150,043
LB02049	Conformation and Reaction Dynamics at the Single Molecule Level	\$99,850
LB03001	Understanding the Agrobacterium Tumefaciens T-DNA Transporter: a Type IV Secretion System	\$68,709
LB03002	Molecular Control of Interfaces between Biological and Synthetic Materials	\$298,444
LB03003	Biomechanics of Cell-Matrix Adhesion in Normal and Malignant Mammary Epithelial Cells	\$58,809
LB03004	Comparative Studies Between Earth and Planetary Sciences	\$49,952
LB03005	High Spatial and Energy Resolution Electron Energy Loss: Spectroscopy for Nanoscale Materials Applications	\$74,564
LB03006	Microscopic Imaging in High-Throughput Screening for Crystals of the Bacterial Ribosome	\$150,257
LB03007	New Femtosecond Spectroscopies of Structural Dynamics: IR Pump-X-Ray Probe Experiments	\$70,626
LB03008	Application of Real-Time PCR with Reverse Transcription for Quantification of Specific Microbial Activity in Complex Communities	\$80,000
LB03009	Short Period Superconducting Undulator Development	\$149,723
LB03010	Analysis of Gene Regulation Through Systematic Determination of Regulatory Protein Binding Specificities	\$124,857
LB03012	Interactive Visualization Methods for Exploration and Comparison of Multi-Billion Base Pair Sequence Data	\$149,439
LB03013	Novel Ultra-high Resolution (to 10 meV) Inelastic Scattering Spectrograph to Study Coupled Electron-Orbital-Phonon Interactions	\$261,320
LB03015	Determining the Light-Absorbing Properties of Aerosol Particles	\$100,561
LB03016	Concepts for a Premier Stable Beam Capability for Low Energy Nuclear Physics	\$150,001
LB03017	Modeling Quantum Coherence and Transport in Nanoscale Spin, Charge, and Flux Devices	\$58,226
LB03018	Chemical Dynamics Under Reaction Conditions	\$89,479
LB03019	Aberration Correction of Electron Microscopes	\$129,974
LB03020	"Ex-Situ" and "Remote" Molecular Imaging and Spectroscopy	\$338,023
LB03021	Optimal Solvers for Infinite-Dimensional Hamiltonian Systems	\$149,515
LB03022	Superconducting Magnet Systems for ex Situ NMR Spectroscopy	\$140,011
LB03023	Soft X-Ray Spectroscopy of Liquid Surfaces	\$80,819

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LBNL - L. Berkeley National Lab

Project ID	Project Name	Total
LB03024	Characterization of Adult Stem Cell Involvement in Mammary Gland Development	\$99,940
LB03025	X-Ray Diffraction for the Study of Strongly Correlated Materials	\$77,837
LB03026	A "MEMS Test Kit" for Structure-Mechanical Property Relationships at the Nanoscale	\$80,087
LB03027	Evaluation of Dynamic Air Quality Impacts of Distributed Generation	\$79,999
LB03028	Electron Production and Collective Field Generation in Intense Particle Beams	\$125,043
LB03029	All Nitride, Full Solar Spectrum Photovoltaics	\$124,652
LB03030	Evolution of Computer Architecture Alternatives	\$298,471
LB03031	Fabrication and In-Situ TEM Study of Nanocontacts in Embedded Nanophase Systems	\$100,022
LB03032	Identification and Analysis of Determinants of Centromere Identify in Drosophila	\$249,973
LB03033	Future Experiments in Neutrino Physics	\$47,041
LB03034	Identification and Characterization of Conserved Noncoding Sequences Using Comparative Genomics and Transgenic Technology	\$65,077
LB03035	Microscopic Theory of Protein Surface: Structure, Response, and Design	\$133,176
Total # of Projects for LBNL:	82	Total Cost for LBNL: \$10,687,993

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LLNL - L. Livermore National Lab

Project ID	Project Name	Total
01-ERD-002	Reconfigurable, Optical Code-Division Multiple Access for Fiber-Optic Networks	\$231,334
01-ERD-004	Generalized Methods for Finite-Element Interfaces	\$225,014
01-ERD-005	Higher-Order, Mixed Finite-Element Methods for Time-Domain Electromagnetics	\$262,346
01-ERD-009	Disposable Polymerase Chain Reaction Device	\$301,486
01-ERD-010	Modeling Tools Development for the Analysis and Design of Photonic Integrated Circuits	\$77,498
01-ERD-013	Adaptive Optics Imaging and Spectroscopy of the Solar System	\$232,287
01-ERD-014	First Physics from BaBar	\$424,936
01-ERD-015	Positrons and Positronium in Insulators	\$293,992
01-ERD-017	Smart Nanostructures from Computer Simulation	\$294,167
01-ERD-018	Shock Recovery of Organic Liquids: From the Origin of Life to the Defense of the Nation	\$404,245
01-ERD-019	Direct Characterization of the Electronic Structure of Shocked and Heated Materials	\$215,015
01-ERD-020	Constraining Nucleosynthesis Models: Mapping Titanium-44 in Cassiopeia A	\$582,877
01-ERD-022	Microstructural Origins of Dynamic Fracture in Ductile Metals	\$180,129
01-ERD-026	Shear Localization and Fracture in Shocked Metals	\$237,579
01-ERD-029	Metastability and Delta-Phase Retention in Plutonium Alloys	\$451,839
01-ERD-030	Thermodynamics and Structure of Plutonium Alloys	\$465,738
01-ERD-031	High-Pressure, High-Strain-Rate Materials Effects	\$478,674
01-ERD-032	Modeling and Characterization of Recompressed Damaged Materials	\$154,025
01-ERD-033	Double-Shell Target Design and Experiments at Omega: Nonlinear Mix Studies for Stockpile Stewardship	\$343,966
01-ERD-035	The Deformation-DIA: A Novel Apparatus for Measuring the Strength of Materials at High Strain to Pressures at Elevated Temperature	\$376,671
01-ERD-036	Designer Diamond Anvils for Novel High-Pressure Experiments: Magnetic Susceptibility Experiments on Actinides to Multimegabar Pressures	\$394,510
01-ERD-042	Resolving Nuclear Reactor Lifetime Extension Questions: A Combined Multiscale-Modeling and Positron-Characterization Approach	\$262,390
01-ERD-044	First-Principles Molecular Dynamics for Terascale Computers	\$276,274
01-ERD-047	Ultrawideband Communications	\$671,684

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LLNL - L. Livermore National Lab

Project ID	Project Name	Total
01-ERD-054	Nanoscience and Nanotechnology in Nonproliferation Applications	\$304,497
01-ERD-063	Novel Approaches for Monitoring Intrinsic Bioremediation	\$174,313
01-ERD-064	Chemical Deactivation of Reactive Uranium	\$149,923
01-ERD-065	Evaluation and Optimization of Methyl-Tert Butyl Ether Biodegradation in Aquifers	\$208,002
01-ERD-072	Further Development of Wet-Etching Tools for Precision Optical Figuring	\$149,927
01-ERD-073	Computational Methods for Collisional Plasma Physics	\$310,280
01-ERD-075	Developing a Radiative-Shock Test Bed	\$232,013
01-ERD-080	Integrated Microfluidic Fuel Processor for Miniature Power Sources	\$319,451
01-ERD-083	High-Average-Power, Frequency-Agile Fiber Lasers	\$168,557
01-ERD-085	Enhancement of Strength and Ductility in Bulk Nanocrystalline Metals	\$211,196
01-ERD-086	Dip-Pen Nanolithography for Controlled Protein Deposition	\$410,584
01-ERD-089	Electromagnetic Imaging of Carbon Dioxide Sequestration at an Enhanced Oil Recovery Site	\$146,056
01-ERD-091	Accelerated Carbonate Dissolution as a Carbon Dioxide Separation and Sequestration Strategy: Continued Experimentation and Simulation	\$142,245
01-ERD-093	High-Accuracy X-ray Imaging of High-Energy-Density Physics Targets	\$448,528
01-ERD-095	Ultrahigh-Power Inorganic Liquid Laser	\$245,537
01-ERD-096	Developing Smart Seismic Arrays: A Simulation Environment, Observational Database, and Advanced Signal Processing	\$355,443
01-ERD-097	Focusing Hard X-Rays at Current and Future Light Sources for Microscopy and High-Power Applications	\$321,067
01-ERD-098	Spectroscopy of Shock-Compressed Deuterium	\$274,876
01-ERD-101	Stroke Sensor Development using Microdot Array Sensors	\$398,399
01-ERD-103	Mesochem: Chemical Dynamics on a Mesoscopic Scale	\$233,376
01-ERD-105	Study of Chemical Reactions Controlling the Mobility of Uranium and Related Contaminants in Ground and Surface Water Systems with Emphasis on Apatite	\$172,482
01-ERD-106	Use of Hydrophobic Silica Aerogel/Granular-Activated Carbon Composite to Remove Arsenic and Hexavalent Chromium from Groundwater	\$152,996
01-ERD-107	Nonlinear Saturation of Parametric Laser-Plasma Instabilities	\$180,536
01-ERD-108	Retrospective Plutonium Biodosimetry by Modeling Urinary Plutonium-239 from Archived Occupational Samples	\$203,479
01-ERD-111	Development of Synthetic Antibodies	\$452,892

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Project ID	Project Name	Total
01-ERD-112	Imaging of Isotopically Enhanced Molecular Targeting Agents	\$364,868
01-ERI-001	Probing the Properties of Cells and Cell Surfaces with the Atomic Force Microscope	\$198,070
01-ERI-003	Starburst Galaxies	\$200,448
01-ERI-004	Lithic Astronomy: Absolute Chronometers and Correlated Isotopic Anomalies in Meteorites	\$200,859
01-ERI-006	Accelerator Analyses for Protein Research	\$205,490
01-ERI-007	Isotopic Tracing of Fuel Components in Particulate and Gaseous Emissions from Diesel Engines using Accelerator Mass Spectrometry	\$145,080
01-ERI-009	Natural Variability and Anthropogenic Influence on Climate: Surface Water Processes in the Indonesian Seas over the Last 120 Years	\$198,026
01-LW-040	Fermion Monte Carlo	\$13,989
01-SI-002	Pathogen Pathway Project	\$1,148,401
01-SI-003	The Stochastic Engine: Improving Prediction of Behavior in Geologic Environments We Cannot Directly Observe	\$1,262,894
01-SI-004	Material Strength at High Pressure	\$1,536,151
01-SI-007	Ultrafast Materials Probing with the Falcon/Linac Thomson X-Ray Source	\$1,929,213
01-SI-008	INCCA: Integrated Climate and Carbon	\$703,078
01-SI-010	SATRN: Secure Air-Optic Transport and Routing Network	\$1,888,990
01-SI-012	Strategic Initiative in Applied Biological Simulations	\$282,455
02-ERD-002	Single-Cell Proteomics with Ultrahigh-Sensitivity Mass Spectrometry	\$679,020
02-ERD-004	Structure and Spectroscopy of Black Hole Accretion Disks	\$197,587
02-ERD-006	Reaching Isochoric States of Matter by Ultrashort-Pulse Proton Heating	\$446,845
02-ERD-008	Extremely-High-Bandwidth Diamond Tool Axis for Weapons Physics Target Fabrication	\$239,109
02-ERD-010	Ultrasonic Nondestructive Evaluation of Multilayered Structures	\$335,973
02-ERD-011	Radial Reflection Diffraction Tomography	\$123,402
02-ERD-012	Proton Radiography of Laser-Plasma Interactions with Picosecond Time Resolution	\$74,835
02-ERD-013	Dense Plasma Characterization by X-Ray Thomson Scattering	\$78,415
02-ERD-014	Nanoscale Fabrication of Mesoscale Objects	\$450,566
02-ERD-016	A Three-Dimensional Model of Signaling and Transport Pathways in Epithelial Cells	\$217,729

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Project ID	Project Name	Total
02-ERD-018	Development of Ultrasensitive High-Speed Biological Assays Based on Two-Dimensional Flow Cell Detection of Single Molecules	\$657,470
02-ERD-021	Modern Chemistry Techniques Applied to Metal Chelation with Medical and Environmental Applications	\$150,302
02-ERD-023	Gaseous Laser Targets and Optical Diagnostics for Studying Compressible Turbulent Hydrodynamics	\$159,623
02-ERD-025	The Properties of Actinide Nanostructures	\$404,643
02-ERD-027	Local-Scale Atmospheric Reactive-Flow Simulations	\$266,155
02-ERD-032	Nanofilters for Metal Extraction	\$170,788
02-ERD-033	Rapid Resolidification in Metals using Dynamic Compression	\$282,440
02-ERD-034	Automated Imagery Data Exploitation (AIDE)	\$85,598
02-ERD-035	Remote-Sensing Signatures for Ballistic Target Interceptions	\$387,004
02-ERD-036	Near-Real-Time Assessment of Health Risks from Simulated Contaminant Wet Deposition using Real-Time Rainfall and Geographic Information System Databases	\$168,775
02-ERD-038	Investigation of the Shores of the Island of Stability	\$240,699
02-ERD-040	Development of a Fast Microfluidic Mixer for Studies of Protein-Folding Kinetics	\$75,522
02-ERD-041	Development of a Predictive Computational Tool for Short-Pulse, High-Intensity Laser-Target Interactions	\$88,725
02-ERD-043	Atomically Controlled Artificial and Biological Nanostructures	\$331,817
02-ERD-044	Infrastructure Response to Natural and Man-Made Ground Motions: High Performance Computing and Distributed Sensing for Regional Scale Prediction and Response	\$64,742
02-ERD-045	Rapid Assay Development for BW Agent Detection and Surveillance	\$795,428
02-ERD-046	Magnetic Transition Metals and Oxides at High Pressures	\$373,653
02-ERD-047	A Revolution in Biological Imaging	\$377,537
02-ERD-048	Advanced Filtration and Regeneration Techniques Based on Nanoporous and Aerogel Technologies	\$151,452
02-ERD-052	Three-Dimensional Astronomy: Scientific Observations with the Livermore Imaging Fourier Transform Spectrograph	\$99,663
02-ERD-054	Single-Particle Nanotracking for Genomes-to-Life Applications	\$98,245
02-ERD-058	Transport and Biogeochemical Cycling of Iodine-129 from Nuclear Fuel Reprocessing Facilities	\$162,025
02-ERD-061	Concealed Threat Detection at Multiple Frames-per-Second	\$406,040

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Project ID	Project Name	Total
02-ERD-064	Program of Simulations and Experiments for Assessment of Rapid Multipurpose Cargo-Scanning Technologies	\$1,099,752
02-ERD-066	Dynamic Simulation Tools for the Analysis and Optimization of Novel Filtration, Sample Collection and Preparation Systems	\$195,924
02-ERD-070	Exploring the Linkage between Impurities and Optical Properties in Rapid Growth of Crystals	\$1,132,743
02-ERD-071	Development of a Quantum-Limited Microwave Amplifier using a dc Superconducting Quantum Interference Device	\$100,243
02-ERI-003	ViSUS: Visualization Streams for Ultimate Scalability	\$465,258
02-ERI-004	A Tunable, Monochromatic, 1-Angstrom, Compton-Scattering X-Ray Microfocus for Multiwavelength Anomalous Diffraction Experiments	\$261,980
02-ERI-005	Direct Imaging of Warm Extrasolar Planets	\$201,142
02-ERI-006	Exchange-Coupling in Magnetic Nanoparticles Composites to Enhance Magnetostrictive Properties	\$200,875
02-ERI-007	Enabling Large-Scale Data Access	\$203,906
02-LW-001	Generation of Single-Cycle Light Pulses	\$191,100
02-LW-003	Automated 3-D Protein Structure Predictions Based on Sensitive Identification of Sequence Homology	\$189,955
02-LW-022	Quantum Vibrations in Molecules: A New Frontier in Computational Chemistry	\$147,867
02-LW-026	Beta-Decay Experiments and the Unitarity of the Cabibbo-Kobayashi-Maskawa Matrix	\$170,009
02-LW-038	Photoluminescent Silica Sol-Gel Nanostructured Materials Designed for Molecular Recognition	\$185,084
02-LW-043	The Kinetic Stabilizer: A Route to a Simpler Magnetic Fusion System	\$165,526
02-SI-004	Short Pulse: An Initiative to Enable Relativistic Applications for Advanced ICF and Stockpile Stewardship	\$2,242,867
03-ERD-001	Chemical Dynamics at Interfaces	\$100,135
03-ERD-002	Adaptive Optics Views of the Hubble Deep Fields	\$335,230
03-ERD-003	Photon Collider Physics	\$314,744
03-ERD-004	QED and Electron Collisions in the Super Strong Fields of K-Shell Actinide Ions	\$403,780
03-ERD-005	Exploring Properties of Quantum Chromodynamics with Proton-Nucleus and Deuteron-Nucleus Collisions	\$341,856
03-ERD-006	Correction of Distributed Optical Aberrations	\$292,137

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Project ID	Project Name	Total
03-ERD-007	Investigation of an Ultrafast Direct Radiation-Driven High-Speed Interferometric Detector	\$140,700
03-ERD-008	Electron Production and Collective Field Generation in Intense Particle Beams	\$203,237
03-ERD-009	Coupled Turbulence-Transport Model for Edge Plasmas	\$499,294
03-ERD-012	Techniques for Judging Intent Behind Cyber Attacks	\$113,641
03-ERD-013	DNA Detection through Designed Apertures	\$279,915
03-ERD-015	Strain Rate Scaling of Deformation Mechanisms	\$195,233
03-ERD-017	Phonon Dispersion Curves Determination in delta-Phase Plutonium-Gallium Alloys	\$502,102
03-ERD-018	Determination of the Microstructural Morphology of Shock-Induced Melt and Resolidification	\$198,093
03-ERD-019	Mononitride Fuel Development for STAR and Space Applications	\$119,501
03-ERD-020	A Comprehensive Study of Surface Chemistry for Application to Engine NOx Aftertreatment	\$144,253
03-ERD-021	Analyzing the Long-Range Transport of Asian Aerosols using an LLNL Atmospheric Model and CAMS/NOAA Measurements from Northern California	\$176,326
03-ERD-022	Environmental Fate of Organo-Phosphorus Compounds Related to Chemical Weapons	\$186,220
03-ERD-023	Propagation Models for Predicting Communication System Performance in Tunnels, Caves, and Urban Canyons	\$233,267
03-ERD-024	Microfluidic System for Solution Array-Based Bioassays	\$352,096
03-ERD-025	Cargo Container Security Sensor System	\$371,135
03-ERD-026	Computation of Hypersonic Flow around Maneuvering Vehicles with Changing Shapes	\$56,353
03-ERD-027	Adaptive-Mesh-Refinement Algorithms for Nonlinear Structural Deformations using Parallel, Unstructured Finite-Element Codes	\$208,602
03-ERD-030	Entity-Based Simulation of Biological Systems	\$374,867
03-ERD-031	Detection and Tracking in Video	\$171,912
03-ERD-032	Scalable Multiple-Sequence Alignment for Pathogen Signatures	\$269,982
03-ERD-033	Scalable Discretization-Enhanced Solvers	\$233,983
03-ERD-038	An Agent that Prohibits Microbial Development and Infection	\$251,534
03-ERD-039	Thermally Driven Processes and Atmospheric Transport and Dispersion of Stable Macroparticles	\$231,575

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LLNL - L. Livermore National Lab

Project ID	Project Name	Total
03-ERD-040	Photochromic Radiation Dosimetry	\$355,306
03-ERD-042	Predicting Effects of Climate Change/Variability on Water Availability	\$662,404
03-ERD-044	Colliding Nanometer Beams	\$427,356
03-ERD-046	Surveillance, Prediction and Insight for Decision making for Earliest Response (SPIDER)	\$421,392
03-ERD-047	Hydrogen Storage in Carbon Nanotubes at High Pressures	\$74,719
03-ERD-048	Long-range, passive detection of fissile material	\$501,870
03-ERD-049	Identifying Gene Regulation Mechanisms using Rule Based Classifiers	\$115,975
03-ERD-050	Carbon-nanotube permeable membranes	\$267,056
03-ERD-051	Development of a Virtual Crystallizer	\$652,358
03-ERD-052	Threat Analysis and Optimal Countermeasure Allocation	\$126,887
03-ERD-058	Innovative Carbon Dioxide Separation Technologies	\$299,208
03-ERD-059	Large-Aperture Diffraction Gratings, the Enabling Technology for High-Energy Petawatt Lasers	\$633,687
03-ERD-060	Molecular Engineering of Electrodialysis Membranes	\$373,088
03-ERD-061	Parallel Graph Algorithms for Complex Networks	\$103,831
03-ERD-062	Microbial Pathways	\$341,915
03-ERD-063	Protein Model Database	\$99,958
03-ERD-064	A Two-Particle Formulation of Electronid Structure	\$98,275
03-ERD-065	Environmental Transport and Fate of Endocrine Disruptors from Non-potable Reuse of Municipal Wastewater	\$94,220
03-ERD-067	Nitrate Biogeochemistry and Reactive Transport in California Groundwater	\$295,587
03-ERD-068	The Instrumented Cell	\$400,528
03-ERD-070	Laser-Matter Interactions with a 527-nm Drive	\$648,296
03-ERD-071	Optics Performance at 1 omega, 2 omega, and 3 omega	\$518,280
03-ERD-072	Characterization and Optimization of High-Energy K-alpha X-ray Sources	\$54,638
03-ERD-073	A Compact Accelerator For Proton Therapy	\$62,124
03-ERD-074	Novel Methods for Bonding Disparate Materials	\$191,945
03-ERD-076	Persistent Monitoring Platforms	\$55,140
03-ERD-077	Plutonium and Quantum Criticality	\$85,026
03-ERI-001	Tectonic Morphochronology of the Southern San Andreas Fault System	\$199,436

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LLNL - L. Livermore National Lab

Project ID	Project Name	Total
03-ERI-002	A Next Generation Microlensing Survey	\$89,358
03-ERI-003	A Computational Design Tool for an Integrated Micromixer and Components Used in Pathogen Detection Systems	\$260,394
03-ERI-004	Elucidation of the Mechanism of Gene Silencing using Small Interfering Rna: Dna Hybrid Molecules	\$61,101
03-ERI-005	Cellular Response to Heat Stress: System Stability and Eipgenetic Mechanisms	\$59,999
03-ERI-007	Development of Sample Handling and Analytical Expertise for STARDUST Comet Sample Return Mission	\$100,154
03-ERI-009	Force Spectroscopy to Study Multivalent Binding In Protein-Antibody Interactions	\$23,925
03-ERI-010	Intracellular chemical measurements: A generalized approach with high-spatial resolution using functionalized nanoparticles	\$21,374
03-ERI-011	Single Molecule Techniques for the Study of Chromatin Assembly and Remodeling	\$24,389
03-ERI-012	Using femtosecond laser subcellular surgery as a tool to study cell biology	\$33,996
03-FS-003	Developing Multilayer Mirror Technology near 45 nm using Scandium-Silicon Interfaces	\$51,881
03-FS-004	Permeability Enhancement in Fine-Grained Sediments by Chemically Induced Clay Fabric Shrinkage	\$74,887
03-FS-005	The Creation of Neutron Star Atmospheres on a Petawatt Laser	\$74,545
03-FS-008	Single-Use Real-Time Bioweapons Detector	\$47,418
03-FS-009	An Early Warning System To Detect Contamination of Municipal Treated Water	\$74,744
03-FS-010	Silicon Nanocrystal Laser	\$22,394
03-FS-011	Quantitative Carbon Isotope Ratio Measurements of Individual Cells	\$73,892
03-FS-012	Single-Crystal Chemical-Vapor-Deposition Diamond: A Novel Material for Neutron Detection	\$74,921
03-FS-018	The Search for Extra Dimensions : Probing Spacetime with Positronium	\$74,565
03-FS-027	A New Material for NIF ICF Targets: Diamond-Like Polyimide	\$74,408
03-FS-028	Feasibility of Proton Radiography for Mesoscale Characterization	\$86,702
03-FS-029	Feasibility Study to Estimate the Person-to-Person Stability of mRNA Signatures of Radiation Exposure in Humans	\$74,969
03-FS-030	Diode laser phase conjugation	\$15,003
03-LW-001	A High Efficiency Grazing Incidence Pumped X-ray Laser	\$215,110

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LLNL - L. Livermore National Lab

Project ID	Project Name	Total
03-LW-004	Resolving the Earthquake Source Scaling Problem	\$190,458
03-LW-005	Space-Time Secure Communications for Hostile Environments	\$189,789
03-LW-017	Mutations that Cause Human Disease: A Computational-Experimental Approach	\$218,070
03-LW-020	Melting Studies of Simple Planetary Ices	\$99,798
03-LW-024	Diode-Pumped Alkali Atom Lasers	\$232,750
03-LW-027	Long-Time-Scale Atomistic Simulations	\$145,680
03-LW-031	A Next-Generation Compton Imager	\$152,615
03-LW-033	Ribozymes with Sequence Elements for Regulation of Expression	\$188,109
03-LW-040	Optical Parametric Amplification in Photonic Crystals	\$172,527
03-LW-047	Laser-Initiated Nanoscale Molecularly Imprinted Polymers	\$185,205
03-LW-048	Covalent Attachment of Metallic Nanorods to Nanocrystals	\$99,127
03-LW-056	Coherent Anti-Stokes Raman Microscopy: Specific Molecular In-Vivo Imaging at Super Resolution without Fluorescence Labels	\$179,135
03-LW-059	A Novel Antimatter Detector with Application to Dark Matter Searches	\$193,234
03-SI-001	Biological and Synthetic Nanostructures Controlled at the Atomistic Level	\$1,484,237
03-SI-003	Image Content Engine	\$799,862
03-SI-004	Advancing the Science and Engineering of Mesoscale Nondestructive Characterization	\$562,502
03-SI-005	Pathomics	\$2,121,096
Total # of Projects for LLNL:	210	Total Cost for LLNL: \$64,865,932

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NTS - Nevada Test Site

Project ID	Project Name	Total
H1700003	Project Management	\$351,292
H1701013	10-Gigabit/Second Fiber Optic Data Link	\$139,385
H1701023	MCNP Evaluation and Enhancement	\$73,030
H1701043	Framing Tube Design and Fabrication	\$72,926
H1701063	Data Analysis and Visualization Tool	\$151,215
H1701073	Magnetic Field Fiber Optic Sensor	\$56,718
H1701093	Multi-frame Imaging VISAR	\$35,448
H1701103	Multispectral X-ray Spectrometer	\$89,815
H170111C	Ultrafast Velocity-based Triggering Systems	\$1,492
H1701153	Tomography Scatter Correction	\$30,315
H170201C	Applications for STLts	\$24,177
H1702023	Framing Tube Development	\$157,454
H1702033	Metalization of Microchannel Plate Input Surface	\$83,942
H1702043	Electrostatic Minifier Study	\$28,491
H1702063	S-1 Photocathode Development	\$90,342
H1702073	Low-Energy X-ray Radiographic Sources	\$230,732
H1703013	Tailored Neutron Source	\$67,974
H1703033	Particle Discriminating Activation Detector	\$145,363
H1703043	Enhanced Accuracy Activation Systems	\$93,228
H1703053	Fission Foil Angular Distribution Measurements	\$68,302
H170305C	CAD, GIS and FIM Data Integration	\$20,702
H1703073	MARXT HV Step Signal Generator	\$175,118
H1703083	Multi-anode, High-bandwidth PMT	\$78,920
H1703153	Compact Fabry-Perot Velocimeter	\$205,609
H1704023	Real-Time Photogrammetric Mapping	\$374,681
H1704033	Monte-Carlo N-Particle (MCNP) Modeling, Simulation, Training, and Improvement	\$81,262
H1704093	Tube-less Neutron Sensor in a Mixed Gamma and Neutron Field	\$68,882
H1704103	Portable Gamma-Ray Detectors with Directional Sensitivity	\$108,728
H1704133	Gamma and Neutron Detection with Cd and Gd coupled with NaI	\$22,744

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NTS - Nevada Test Site

Project ID	Project Name	Total
H170416C	Development of a BRDF Normalization Model	\$23,750
H1704193	Rapid In-the-Field Calibration of In-Situ HPGe Gamma Spectrometers	\$47,652
H1704203	⁶ Li(Ce) Glass Fiber Neutrons and Gamma Detection System	\$100,068
H1704233	Combination Neutron and Gamma Ray Detector	\$61,849
H1704353	RF Detection of High Explosive Materials	\$51,819
H1705023	Airborne Communicable Viral Pathogen Sensor	\$90,098
H1705043	Multi-Channel Radio Frequency CDMA Data Communications	\$32,795
H1705063	Survey of Covariance Mapping and Statistical Image Enhancement	\$27,659
H1705073	Capacitive Proximity Imaging System	\$50,144
H1705083	Fiber-Coupled VISAR	\$144,707
H1705093	Flexible Short-Range Communications Network	\$37,919
H1705103	Gamma and Neutron Counter	\$26,479
H1705153	Heat-Stimulated Lithium Niobate X-Ray Source	\$48,440
H1705173	Low-Frequency Radio Wave Motion Sensing	\$87,592
H170518C	Compact Intensified Camera	\$9,489
H1705193	New Radiation Detection Scheme	\$44,823
H170520C	Laser Automatic Gain Control	\$17,723
H1705273	Handheld Direct-view Thermal Imager	\$35,734
H1705283	UV LIDAR Telescope for Remote Sensing	\$77,347
Total # of Projects for NTS:	48	Total Cost for NTS: \$4,144,374

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ORNL - Oak Ridge National Lab

Project ID	Project Name	Total
3210-2010	A Novel Device for Quantitative Single-Atom Detection of Carbon-14	\$25,009
3210-2021	Simulation of Biomolecular Complexes: Advanced Computational Sciences at the Molecular Level	\$20,164
3210-2023	A Novel Technique for Infrared Imaging	\$5,172
3210-2024	Carbonation of Serpentine for Long-Term Carbon Dioxide Sequestration	\$19,580
3210-2028	Development of a Generic Computational Method for Biological Data Clustering	\$29,985
3210-2029	High-Resolution, Real-Time, Three-Dimensional Imaging Using Two-Wavelength Spatially Heterodyned Interferometry	\$29,989
3210-2031	A New Microwave-Driven Pack Cementation Coating Process	\$40,905
3210-2032	Nanostructures for Spatially Resolved Macromolecular Delivery to Viable Whole Cells	\$19,504
3210-2033	Online Characterization of Individual Airborne Bacteria	\$5,495
3210-2036	A Miniature Electrostatic Molecular-Ion Storage Ring	\$32,529
3210-2038	Ultrasonic Processing of Ultrafine Materials	\$60,756
3210-2039	Compound Semiconductors on Silicon: Shedding Some Light on Matter	\$55,952
3210-2041	Signal Processing Architectures for Maskless Lithography	\$49,987
3210-2042	Prediction of Sepsis Onset in Trauma Victims Using Advanced Nonlinear Analysis of Time-Serial Physiological Data Including Heart Rate Variability	\$10,476
3210-2045	Genetic Variation in Cellular Responses to Low-Dose Radiation	\$51,969
3210-2046	Ultrafast-Laser-Produced Radioactive Ions	\$34,822
3210-2048	Density Matrix Renormalization Group for Interacting Fermions	\$29,819
3210-2049	Ferromagnetism in Dilute Magnetic Semiconductors: Getting to the Science with Neutron Scattering	\$100,016
3210-2050	Engineered Entanglement in Two-Photon States	\$94,378
3210-2051	Cardiopulmonary Resuscitation Using Optimal Control	\$48,845
3210-2052	Photomolecular Comb	\$70,741
3210-2053	Growth of Magnesium Diboride Thin Films for Superconductor Applications	\$9,432
3210-2054	Fluorescence-Based Coatings Diagnostics	\$9,398
3210-2056	Metabolic Profiling: A Required Element in Functional Genomics	\$68,193
3210-2057	Nanoelectronic Devices Made From Doped Nanofibers	\$96,079
3210-2058	Protein Surface Mapping by Chemical Oxidation and Mass Spectrometry	\$109,731
3210-2059	Ultraviolet Electroluminescent Device Development	\$40,977

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Project ID	Project Name	Total
3210-2060	Light-Emitting Nanoscale Tunnel Junctions	\$19,333
3210-2061	Highly Reflective Subwavelength Structures for Homeland Security Initiatives	\$13,401
3210-2062	Dynamic Transport in Nanostructures	\$124,756
3210-2063	Variance Reduction Tools for Making Monte Carlo Radiation Treatment Planning Clinically Useful	\$124,965
3210-2064	A New Approach to Chemical Detection: Infrared Coherent Anti-Stokes Raman Scattering	\$115,752
3210-2065	Novel Platinum Support for Proton-Exchange-Membrane Fuel-Cell Cathode and Anode Active Layers	\$90,208
3210-2066	Identifying a Suitable Methodology to Extract Meaningful Results from Dose Volume Histograms using Statistical Analysis	\$53,871
3210-2067	Nanocrystalline Giant Magnetostrictive Materials for Microactuator Applications	\$60,449
3210-2068	Automated Image Analysis for Functional Genomics	\$122,801
3210-2069	Development of a New High-Temperature Proton-Electron Mixed Conductor for Hydrogen Separation	\$104,926
3210-2070	Probing Charge Transport in Oriented Polymer Nanostructures: Toward Integrated Molecular-Scale Optoelectronics	\$80,968
3210-2071	Developing a New Core Competency for ORNL: Macromolecular Neutron Crystallography	\$124,879
3210-2072	Proof-of-Principle Test for Endophyte-Mediated Effect on the Uptake of Metals by Tall Fescue	\$14,947
3210-2073	Gold Nanocrystal Sensors/Concentrators for Chemical Weapons Agents	\$19,936
3210-2074	Selective Area Chemical Vapor Deposition of Carbon Nanotube Films Using Seeded Molecular Beams	\$59,961
3210-2075	Novel Treatment for Biological Warfare Pathogens	\$124,947
3210-2076	Permeable Environmental Leaching Capsules (PELCAPs) for Nondestructive In Situ Evaluation of Contaminant Immobilization in Soil	\$75,306
3210-2077	High-Tc Silicon-Compatible Ferromagnetic Semiconductors	\$92,976
3210-2078	Development of Readout Electronics Architecture for Silicon Strip Vertex Detector Upgrade to the PHENIX Experiment	\$93,157
3210-2079	Controlling Size and Function of Metal Oxide Nanoparticles: Coupling Micellar Nanoreactor Synthesis, and Hydrothermal Processing	\$83,185
3210-2080	Synthesis of Highly Textured Ternary Carbide Compounds for Power Generation and Other Industrial Applications	\$70,159

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Project ID	Project Name	Total
3210-2081	An Innovative Technique for Bi-Material Interface Toughness Research	\$45,071
3210-2082	Ontology-Based Three-Dimensional Modeling for Human Anatomy	\$74,310
3210-2083	Nanoporous Inorganic Membranes for High Selectivity Hydrogen Separations	\$35,000
3210-2084	High-Aspect Ratio Carbon Nanofiber Probes for Scanning Probe Microscopy	\$64,649
3210-2085	Construction of a Gene-Prediction Algorithm in Populus: Adding a New Dimension to Complex Biology	\$59,994
3210-2086	Enhanced Biological Hydrogen Production Using Three Phase Systems	\$19,855
3210-2087	In Situ Studies of Hydrogen Storage Materials Using Neutron Scattering	\$24,310
3210-2088	Toward Neutron Star Merger Simulations: Gravitational Waves, Heavy Element Nucleosynthesis, and Gamma-Ray Bursts	\$24,923
3210-2089	Micro- and Mesoscale Strain Measurements in Cement-Based Materials	\$21,736
3210-2090	Investigation of the Tribological Properties of Graphitic Foam Reinforced Carbon-Carbon Composites	\$19,738
3210-2091	Development of a Three-Dimensional Radioisotope Depletion Method Using Monte Carlo Transport	\$29,958
3210-2092	Zero-Loss Fiber Optic Splitter	\$54,984
3210-2093	Alkanes for High-Capacity Hydrogen Storage	\$12,690
3210-2094	The Global Optimization Problem for Remote Sensing: A Guaranteed, Efficient Solution	\$29,813
3210-2095	High-Speed Decay Lifetime Analysis Using Field Programmable Gate Arrays	\$16,669
3210-2096	Sounds of Rapids as an Attractant for Migratory Fish	\$19,691
3210-2097	Robust Segmentation of Telomeres in Metaphase FISH Images	\$19,999
3210-2098	Tailoring the Properties of Crystalline Solid Solutions by Magnetic and Stress Annealing	\$18,979
3210-2099	High Effective Hydrogen Storage Density	\$12,692
3210-2100	Metallic Nano-Fuels for Vehicles	\$7,357
3210-2101	Enhancing Performance of Hydrogen Storage Materials through Nanoscale Design	\$9,059
3211-2015	Nanoscale Photosynthesis, the Photophysics of Neural Cells, and Artificial Sight	\$200,593
3211-2016	Creating Oxygen-Rich Nanoclusters for High-Temperature Strengthening of Structural Alloys	\$18,738
3211-2024	Nanoscale Explosive-Energy-Burst Generators Using Controlled Nuclear-Mechanical Triggering of Pretensioned Liquids	\$19,519

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Project ID	Project Name	Total
3211-2025	Combined Neutron and X-Ray Diffraction	\$129,914
3211-2026	Synthesis of High-Performance Algorithms for Electronic and Nuclear Structure Calculations	\$309,949
3211-2027	Cellular Algorithms for Next-Generation High-Performance Cellular Architectures	\$249,976
3211-2028	Scalable Tools for Petascale Distributed-Data Analysis	\$335,038
3211-2029	Community-Wide Analysis of Unique Sequences and Functions from Uncultured Microorganisms	\$201,345
3211-2030	Elucidating Eukaryotic Gene Regulatory Networks	\$346,564
3211-2031	High-Throughput Analysis and Modeling of Protein Complexes	\$154,945
3211-2032	Protein Microarray Interactions Readout using Stepping Sampling Probe/Electrospray Mass Spectrometry	\$238,984
3211-2033	Reactive Membranes for Clean Coal Technologies	\$218,101
3211-2034	Innovative Safety Technologies for Generation IV Reactor Designs	\$279,553
3211-2035	Enhanced Performance and Energy Savings Through Ultrahigh Magnetic Field Processing of Ferromagnetic Materials	\$297,952
3211-2036	Remote Emission Sensor Technology for Heavy-Duty Truck Emissions	\$322,493
3211-2037	Advanced High-Temperature Test Loop For Materials Compatibility in Advanced High-Temperature Reactors	\$224,693
3211-2038	Electrical Conductivity at the Nanoscale	\$278,947
3211-2039	Structure and Dynamics of Fluids in Confined Geometries	\$279,284
3211-2040	Self-Organized Copolymer and Nanoporous Oxide Thin-Film Templates for Controlled Synthesis and Periodic Replication of Nanoscale Materials	\$283,855
3211-2041	Multifunctional Nanotube Composites	\$338,139
3211-2042	Nanoscale Photonic Crystal Laser	\$331,438
3211-2043	Multiscale Modeling and Simulation of the Growth and Functionalization of Nanotube Crystals, Arrays, and Polymeric Composites	\$192,884
3211-2044	Development of Time-of-Flight Capabilities for Studies of Inelastic Neutron Scattering and the Dynamics of Soft Matter	\$232,582
3211-2045	Detector Development for Fundamental Neutron Physics at the Spallation Neutron Source	\$249,785
3211-2046	Three-Dimensional Neutron Structural Microscopy: Design, Simulation, and Demonstration	\$218,412
3211-2047	Simulation of Subsurface Environmental Processes	\$209,268

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Project ID	Project Name	Total
3211-2049	Elucidating the Functions of Genes and Pathways That Contribute to Genomic Instability, Cell Death, and Malignancies in Mouse Models with Telomere Dysfunction	\$284,468
3211-2050	Identification and Characterization of Genes and Protein Components in Cell-Cycle Control and Cancer Development	\$279,921
3211-2053	Ecosystem Genomics-An Emerging Opportunity for Environmental Research	\$102,073
3211-2057	Neutron-Rich Radioactive Ion Beam Production with High-Power Electron Beams	\$75,858
3211-2058	Scaling Climate Models for Future Computer Architectures	\$249,659
3211-2059	Advanced Computational Methods	\$399,948
3211-2060	Genomic Characterization of Belowground Ecosystem Responses to Climate Change	\$289,601
3211-2061	Self-Organizing Polymers as Biomaterials	\$314,113
3211-2062	Materials Science of Nanostructured Carbon and Graphite	\$262,381
3211-2063	Aberration-Corrected, Ultra-High-Resolution Electron Microscopy for Atomic-Level Characterization of the Structure and Chemistry of Nanophase Materials	\$264,745
3211-2064	Biologically Driven Controlled Synthesis and Directed Assembly of Nanophase Materials	\$257,687
3211-2065	Creating New Climate Drivers and Interactions in Global Climate Models	\$350,206
3211-2066	Biomolecular "Locks and Keys" High-Performance Computing for Investigation of Recognition Principles in the Complexes of Biological Macromolecules	\$164,990
3211-2067	Toward Common Components for Computational Nanoscience	\$276,745
3211-2068	Comprehensive Molecular Probing of Live Biological Cells	\$255,016
3211-2069	Selective Catalytic Oxidation	\$106,945
3211-2070	Zero-Power, Low-Cost Sensor Platform	\$225,660
3211-2071	Intelligent Consequence Management for Energy Assurance	\$221,915
3211-2072	Breakthrough Multi-Megawatt Space Reactor Power System Design	\$344,227
3211-2073	Distributed Intrusion Detection and Attack Containment for Organizational Cyber Security	\$223,189
3211-2074	Image to Intelligence Archive: Intelligent Agent-Based, Large-Scale, Spatial-Data Management and Analyses	\$381,122
3211-2075	Advanced Ion Trap Mass Spectrometry for the Rapid and Confident Identification of Biological Agents	\$319,664
3211-2076	NEUTROMEAS: A Pixel Detector for Neutron Imaging	\$238,490

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Project ID	Project Name	Total
3211-2077	Nanoscale Control of Collective Phenomena Using Artificially Structured Materials	\$45,000
3211-2078	Scalable Visualization Tools and Technologies	\$81,426
3211-2079	Materials Needs for Successful Implementation of Lean NOx Treatment Technology	\$53,577
3211-2080	Production of Hydrogen Using Nuclear Energy and Inorganic Membranes	\$150,135
3211-2081	Probing Explosive Nucleosynthesis Through Measurements at the Holifield Radioactive Ion Beam Facility	\$89,095
Total # of Projects for ORNL: 123		Total Cost for ORNL: \$15,933,070

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Project ID	Project Name	Total
PN01007/1507	Atmospheric Flow Reactor Chamber for Gas Phase Kinetics	\$78,757
PN01017/1517	Demonstration of Ultrasound for the Characterization of Microbial Biofilm Structure and Growth	\$74,805
PN01025/1525	Diagnostic Non-Radioactive and Long-Lived Radionuclides by Inductively Coupled Plasma Mass Spectrometry	\$47,186
PN01032/1532	Fermentation Development Using Filamentous Fungi	\$224,659
PN01037/1537	Majorana Sensitivity Study	\$163,787
PN01039/1539	Mesoscale Material Modeling for Prognostics	\$115,005
PN01040/1540	Methods for Determining Structure and Bonding in Molecules Containing Actinide Elements and Technetium	\$104,847
PN01045/1545	Modified Carbon Supports for Aqueous Phase Catalysis	\$87,944
PN01050/1550	Nanoparticle-Based Materials for Microanalysis	\$131,990
PN01052/1552	Nonuniform Memory Access Algorithms and Infrastructure for Image Processing	\$173,416
PN01058/1558	Organism Discovery for Fermentation Using Filamentous Fungi: Reference Collection and Screening	\$105,715
PN01067/1567	Regulated Processing of Cytokines and Growth Factors at the Cell Surface	\$248,869
PN01072/1572	Single-Molecule Study of Protein-Protein Interaction Mechanisms and Dynamics in Cell Signaling	\$197,395
PN01077/1577	Synthesis and Characterization of Chemically Tailored Monolithic Nanoporous Thin Films using Molecular Beam Techniques	\$216,319
PN01079/1579	Synthesis and Characterization of Novel Nanocrystalline Oxide Film Structures	\$253,045
PN01080/1580	Synthesis of Novel Nanocluster-Based Materials	\$30,001
PN02001/1589	A Protein Functional Analysis for Information Integration	\$186,381
PN02002/1590	Actinide Coordination Chemistry for Advanced Separations Technology	\$125,002
PN02004/1592	Advanced Meteorological Modeling for Applied Dispersion Models	\$34,971
PN02005/1593	Advanced Subsurface Software for Subsurface Science	\$254,252
PN02007/1595	Algorithms for Quantitative Multidimensional Spectral Analysis	\$44,977
PN02009/1597	Autonomous Robotic Controls	\$74,820
PN02010/1598	Bayesian Nonlinear Regression Modeling for Remote Sensing Applications	\$85,333

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Project ID	Project Name	Total
PN02012/1600	Carbon Sequestration and Production of Chemical Feedstocks With Artificial Photosynthesis	\$83,500
PN02013/1601	Characterization of Shewanella Oneidensis MR-1 Genes Involved in Environmental and Cell-Cell Sensing	\$329,369
PN02015/1603	Computational Cell Environment	\$358,338
PN02016/1604	Design and Simulation of the Future Integrated Energy System	\$247,645
PN02017/1605	Detection of the Sources of Atmospheric and Nuclear Explosion Particulate Matter	\$88,522
PN02018/1606	Development of a Distributed Land Surface Hydrology-Biogeochemistry Model	\$47,201
PN02020/1608	Development of Advanced Proteomic Methods and Their Application to the Analysis of Human Cytomegalovirus	\$210,063
PN02021/1609	Development of Damage and Optimization Tools for the Design of Short-Fiber Thermoplastic Hybrid Composite Structures	\$197,922
PN02022/1610	Development of Data Mining Capabilities for Proteome-Wide Analyses	\$169,968
PN02028/1616	Epidermal Growth Factor Receptor Signaling and Related Protein-Protein Interactions	\$140,008
PN02029/1617	Epitaxial Growth and Properties of Nanoscale Oxides for Spintronics	\$401,915
PN02030/1618	Evaluation of Crystal Fate in Cold Crucible Induction Melter Glass Processing	\$33,842
PN02033/1621	Filamentous Fungal Genetics	\$249,279
PN02035/1623	Disposal of CO2 in Sedimentary Rock Formations	\$258,988
PN02035/1623-A	Disposal of CO2 in Gas Hydrate Formations	\$69,995
PN02035/1623-B	Disposal of CO2 in Basalt Formations	\$74,687
PN02036/1624	Identification of Specific Tyrosine Phosphorylations Associated with Activation of Oncogenic Signaling Pathways	\$170,263
PN02037/1625	Image Registration Scheme Using Hough Transform	\$209,985
PN02039/1627	Kinetic Simulations and Network Analysis: The EGF Receptor Signaling Network	\$201,401
PN02040/1628	Knowledge Discovery and Data Mining of Scientific Data Sets	\$119,931
PN02041/1629	Microscopic and Spectroscopic Analyses of Iron Reduction by Shewanella oneidensis MR-1	\$229,992
PN02043/1631	Natural Three-Dimensional Hand Tracking	\$9,979

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Project ID	Project Name	Total
PN02044/1632	Nondestructive Characterization of Life-Limiting Degradation of Nuclear Reactors	\$93,276
PN02048/1636	Particulate Matter Emissions Aftertreatment Modeling	\$125,971
PN02049/1637	Partitioning Tracer Related Technology Development for Tank Leak Detection, Monitoring, and Mitigation	\$50,601
PN02051/1639	Proteomics of Morphology Determination in a Fungus	\$58,764
PN02053/1641	Quantum Calculations for Systems With 104-105 Atoms: Application to Nano-Materials and Biochemical Reactivity	\$148,693
PN02054/1642	Radiation-Induced Bystander-Dependent Regulation of Cell Transformation Response	\$29,916
PN02056/1644	Risk and Impact Assessment Metrics for Carbon Sequestration Solutions	\$21,993
PN02061/1649	Simulating the Climatic Effects of the Asian Brown Cloud	\$42,063
PN02062/1650	Simulation Methodology Development for an Energy Transmission and Distribution System	\$201,198
PN02063/1651	Single Chain Monoclonal Antibodies (scFv): A Versatile Source of Antigen Specific Reagents	\$225,007
PN02064/1652	Single Molecule Approach for Understanding Epidermal Growth Factor Receptor Interactions	\$258,043
PN02069/1657	Synthesis Techniques and Characterization of Nanostructured Organic-Inorganic Hybrid Systems	\$208,939
PN02070/1658	Three-Dimensional Object-Based Characterization and Analysis	\$344,276
PN02071/1659	Use of Satellite Imagery and Three-Dimensional Computational Fluid Dynamics Models to Remotely Quantify Water Quality Variations in the River/Reservoir Environment	\$32,909
PN02073/1661	Virtual Test Reactor for Materials	\$27,360
PN02075/1663	Yttrium-90 Fibrin Composites for Treating Minimum Residual Disease	\$83,188
PN03001/1664	A Molecular-Level Description and Sensitivity Analysis for Improved Modeling of Aerosol Nucleation and Growth in Global Climate Models	\$114,086
PN03002/1665	A Scalable Architecture for Content-Based Information Discovery	\$117,394
PN03003/1666	Adaptive Data Integration Middleware for Dynamic Information Discovery	\$183,237
PN03004/1667	Advanced Information Analysis and Processing	\$36,902
PN03005/1668	Advanced Radiochemical Analyses	\$171,720

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Project ID	Project Name	Total
PN03007/1670	Affinity Reagents for Surface Functionalization	\$60,204
PN03008/1671	Apatite Formation Using Calcium Ascorbate	\$9,215
PN03009/1672	Atomically Resolved Imaging of Si(111)-(7×7) and TiO ₂ (110)-(1×1)	\$35,019
PN03010/1673	Atomic-Level Simulations to Interpret Neutron Scattering Data for Materials	\$25,138
PN03011/1674	Boron Systems for Hydrogen Storage	\$27,079
PN03012/1675	Brazing Techniques for Dense High Fired Alumina Ceramics	\$48,955
PN03013/1676	Carbon-Carbon Composite Electrically Enhanced Sorption for Carbon Dioxide Separations	\$49,889
PN03014/1677	Climate Change Chemistry of Atmospheric Particles	\$59,758
PN03015/1678	Communications Analysis	\$40,578
PN03016/1679	Computational Catalysis	\$92,895
PN03017/1680	Concept-Based Document Analysis: Human-Centered Information Discovery	\$60,151
PN03018/1681	Cooperative Multiagent System for Data Mining and Fusion	\$91,953
PN03019/1682	Data Anomaly and Signature Detection with Associated Data Utility Development	\$49,782
PN03020/1683	DC-STREAMS: Detecting Change in Continuous, Time-Varying Data Streams	\$122,947
PN03021/1684	Detection of Chemical Weapon Related Chemicals in Rivers and Coastal Environments Using Bivalves	\$86,930
PN03022/1685	Determination of Failure Probability Correlations for Estimating the Effect of First-Principles Prognostics on Reactor Operational Risk	\$61,263
PN03023/1686	Development and Demonstration of Statistical Summarizing and Visualization of Data Used to Support Risk Decision Making	\$29,402
PN03024/1687	Development of a Salmonid Based DNA Microarray for Toxicological Testing of Environmental Contaminants	\$82,172
PN03025/1688	Development of a Sensor to Monitor Swimming Activity of Fish	\$15,014
PN03026/1689	DNA Microarrays for Monitoring Chemically-Induced Stress in <i>Chironomus tentans</i>	\$54,654
PN03027/1690	Domain Specific Architecture for Intelligence Analysis	\$142,165
PN03028/1691	Electrode Structures for High Pressure Xenon Detectors	\$43,914
PN03029/1692	Electronic Structure of Organic Light-Emitting Diode Materials	\$101,413
PN03030/1693	Elucidating Cell Signaling Networks in <i>Shewanella oneidensis</i> MR-1	\$179,527

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Project ID	Project Name	Total
PN03031/1694	Enhanced Measurements of Submicromolar Concentrations of Pu in Solution Via Spectrophotometric Detection of Plutonium(VI)	\$64,703
PN03032/1695	Evaluation of the Reforming Characteristics of Various Biomass-Derived Feedstocks in Producing Hydrogen for Fuel Cells	\$63,240
PN03033/1696	Fermentation of Lignocellulose to Ethanol by Filamentous Fungi	\$150,358
PN03034/1697	Framework for Climate Modeling using Super Parameterization Techniques	\$138,567
PN03035/1698	Free Hydrogen Detection and Quantification by Gas-Coupled Ultrasound	\$7,154
PN03036/1699	Functionalization of Nanostructures for Chemical Conversions of Importance in Biobased Processing	\$34,961
PN03037/1700	Heuristic Entity Relationship Building Environment	\$278,482
PN03038/1701	High Performance Nuclear Separation and Preconcentration with Chemically Selective Mesoporous Structures	\$43,835
PN03039/1702	Highly Selective Monolayer Sorbents for Advanced Analytical Applications	\$125,088
PN03040/1703	High-Speed, Three-Dimensional Visualization of Intercellular and Intracellular Signal Transduction in Complex Cell Structures	\$257,233
PN03041/1704	Hydrogen Pathways and Analysis of Energy, Economic, and Environmental Implications	\$30,943
PN03042/1705	Hydrogen Storage Concepts	\$81,525
PN03043/1706	Identification and Analysis of Hidden Multi-Relational Links	\$146,276
PN03044/1707	Implementation of Parallel Solver in Coupled Fluid, Energy, and Solute Transport Computer Code	\$45,585
PN03045/1708	Imprinted Media for Highly Selective Separation of Explosives, Chemical Warfare Agents, and Biological Warfare Surrogate Organisms	\$165,459
PN03046/1709	In Situ Magnetic Resonance Investigations of Metabolism and Mass Transport in Biofilms	\$189,308
PN03047/1710	In Situ Spatial Analysis of Expression in Bioreactor Granule Microbial Communities	\$260,929
PN03048/1711	Influence of Gd and Sm Doping on Atomic and Ionic Transport Properties of Novel Nanostructured Ceria-Zirconia Multilayers	\$124,718
PN03049/1712	Influence of Surface Thermodynamic Properties on Bacterial Transport in Variably Saturated Porous Media	\$25,685
PN03050/1713	Infrared Detection of Organics in Artificial Aging Experiments	\$22,276
PN03051/1714	Investigation of Bicyclic Diamides and Their Use in Separations	\$58,159

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Project ID	Project Name	Total
PN03052/1715	Knowledge Signatures for Integrated Information Management	\$160,525
PN03053/1716	Life-Limiting Degradation Mechanisms in Current Light-Water and Advanced Concept Reactors	\$96,273
PN03054/1717	Microanalytical System for Detection of Explosives and Organophosphates	\$54,009
PN03055/1718	Modeling of Power Systems as Complex Adaptive Systems	\$35,299
PN03056/1719	Multilayer Thin Film Separation Membranes	\$6,980
PN03057/1720	Multiple Sensor Data Integration and Decision Analysis - Chemical Signature Detection	\$99,021
PN03058/1721	Multiple Sensor Data Integration and Decision Analysis - Nuclear Signature Detection	\$74,135
PN03059/1722	Neutron Detector Research	\$24,367
PN03060/1723	Neutron Scattering to Determine Biomolecular Conformations on Biosensor Surfaces	\$2,953
PN03061/1724	Neutron Scattering to Probe Disorder in Protein Complex Formation	\$23,944
PN03062/1725	Neutronic Calculations to Support Advanced Hybrid Fuel Development	\$24,796
PN03063/1726	New Thin-Film Electroactive Materials for Enhanced Separations	\$59,290
PN03064/1727	Nondestructive Measurement of Sediment Mechanical Properties to High Pressure	\$16,744
PN03065/1728	Novel Nanocatalysts -- Glycosidase Mimetics	\$41,429
PN03066/1729	Novel Nano-Structured Catalysts	\$65,098
PN03067/1730	Novel Near-Infrared Laser Absorption Spectrometer Development	\$36,823
PN03068/1731	Ionization Mass Spectrometry	\$99,233
PN03069/1732	Optically Stimulated Luminescence-Based Passive Gamma Ray Spectrometer	\$54,974
PN03070/1733	Organic Synthesis Using Plasma-Facilitated Catalysis	\$129,891
PN03071/1734	Organism Identification Using Reverse Chemistry Arrays	\$222,086
PN03072/1735	Parallel Computing Methods for Surface Water Flow and Transport	\$41,549
PN03073/1736	Peptide Permutation and Protein Prediction	\$207,351
PN03074/1737	Periodic Structures Using Standing Ultrasonic Waves	\$70,063
PN03075/1738	Preconcentration of Organic Signatures Based on Carbon Nanotube Composites	\$93,877
PN03076/1739	Radio Frequency Tag Technology for Tracking Site Fidelity of Wild Animals	\$39,958
PN03077/1740	Rare Gas Isotopic Signature Evaluation of Actinide Contaminant Sources	\$55,976

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Project ID	Project Name	Total
PN03078/1741	Real-Time Detection and Multidimensional Characterization of Single Air-Borne Microorganisms	\$44,953
PN03079/1742	Regenerable Sorbents for Carbon Dioxide Capture Based on Functionalized Nanomaterials	\$125,288
PN03080/1743	Risk Hazard-Risk Measure Methodology Functionality Upgrade for Rapid Implementation on Risk-Based Accelerated Clean-Up Strategies	\$53,804
PN03081/1744	Scenario and Knowledge Framework for Analytical Modeling	\$227,234
PN03082/1745	Sensor and Tracer Technology for Characterization of Ultra-Low CO2 Leakage Fluxes and Pathways	\$109,238
PN03083/1746	Single Enzyme Nanoparticles on Nanostructured Matrices	\$179,977
PN03084/1747	Sonoluminescence Assisted Degradation of Recalcitrant Hydrocarbon Compounds in Aqueous Matrices	\$33,862
PN03085/1748	Sonoluminescence Following Acoustically Driven Bubble Collapse	\$94,731
PN03086/1749	Stress-Activated Control Mechanisms Underlying Signal Transduction Networks	\$344,306
PN03087/1750	Structure Determination of Biomineralization Proteins Using Neutron Scattering	\$35,163
PN03088/1751	Supercritical Fluid Extraction of Bacterial Spores and Analysis for Specific Biomarkers	\$108,039
PN03089/1752	Surface Functionalization for Biorecognition	\$66,986
PN03090/1753	Synthesis and Characterization of Novel Nanoporous Transition Metal Phosphates with Inherently High Anion Adsorption Properties	\$35,979
PN03091/1754	Transcriptional Profiling of Microbial Syntrophic Systems	\$165,937
PN03092/1755	Ultrasonic Measurement of Flow in Microchannels	\$40,026
PN03093/1756	Using Direct Numerical Simulations of Boundary Layer Turbulence to Improve Atmospheric Emergency Response Models	\$24,008
PN03094/1757	Using High Frequency Pulsed Ultrasound at Sub-Cavitation Conditions as a Mechanism to Enhance Energy Efficiency and Selectivity in Heterogeneous Catalytic Chemistry	\$74,068
PN03095/1758	Validation of scFv Antibodies for Identification of Protein Complexes	\$164,221
PN03096/1759	Virtual Environments in n-Dimensions for Analysts	\$72,009
Total # of Projects for PNNL:	156	Total Cost for PNNL: \$17,258,779

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PTX - Pantex Plant

Project ID	Project Name	Total
PX01001	Proximity Tracking Capability	\$675,228
PX01004	Thermally Stable High Explosive for Booster Applications	\$20,745
PX01005	Clustering Data Processing	\$14,859
PX01008	Compatibility and Modeling of Solvents with Metals and Alloys Used in Weapons	\$61,385
PX01009	Circuitry Analysis to Produce Work Area Voltage Profiles Generated by Lightning Flashes	\$136,979
PX01010	Solvent Recovery and Reuse from Synthesis and Formulation Processes	\$77,650
PX01012	Processing and Aging of Explosives and Binders Studied by Laser Raman Spectroscopy	\$65,094
PX01013	Development of a Laser-Based Methodology for Inside Shape Measurements	\$368,587
PX01015	Explosive Synthesis & Formulation Process Optimization by Computer Modeling	\$346,979
PX02001	Robotic Pit Handling & Packaging	\$148,287
PX02002	Advanced Leak Detection System	\$52,854
PX02003	Establish a Computational Capability at Pantex for Modeling Organic Compounds for Stockpile High Explosives and Design Agency Research Explosives	\$336,433
PX02006	Alternate Explosive Destruction Technology Demonstration	\$45,677
PX02007	3D Imaging System	\$39,351
PX02009	Thermal Modeling of Pit Storage Areas	\$226,894
PX02011	3D Acoustical Resonance System	\$61,589
PX02015	Development and Implementation of an Enhanced Chemical Reactivity Test	\$99,434
PX02016	Application of Chemical Force Microscopy to Determine the Strength of Bonds between High Explosives and Binders	\$84,871
PX02017	Biometric Authentication	\$19,515
PX02020	Non Contact Measurement and Infrared Temperature Imaging of Explosives	\$68,570
PX02021	Fiber Optic Isolation for RF Testers	\$78,977
PX03001	High-Precision Non-Contact White Light Digitizing Sensor	\$16,296
PX03002	Enhanced Analysis Capability Supporting Accelerated Aging Studies	\$684,956
PX03004	Formation and Detection of Pores in Polymeric Materials	\$205,621
PX03005	Establishment of a High Explosive Explosives Powder Pattern Library	\$202,962
PX03006	GMR Eddy Current System	\$90,529

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PTX - Pantex Plant

Project ID	Project Name	Total
PX03007	PT4188 Modular Telemetry Test System	\$486,809
PX03008	Neutron Non-Destructive Imaging of Weapons Materials	\$300,611
PX03009	Validating Ultra Sonic Output for Positional Accuracy	\$45,352
PX04009	Classified Weapon Decision Support System	\$200
Total # of Projects for PTX:	30	Total Cost for PTX: \$5,063,294

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SNL - Sandia National Lab

Project ID	Project Name	Total
11130	Molecular Integrated Microsystems (MIMS)	\$814,753
26508	Mesoscale Wide-Bandwidth Linear Magnetic Actuators	\$294,912
26509	Levitated 3-Axis Microaccelerometer	\$308,690
26510	Microfabrication Processes combining Focused Ion Beam Machining and Thin Film Vapor Deposition Techniques	\$278,149
26511	Resolving Fundamental Limits of Adhesive Bonding in Microfabrication	\$261,054
26512	Parallel Atomistic Computing for Failure Analysis of Micromachines	\$175,649
26514	Smart Sensor Technology for Joint Test Assembly Flights	\$302,785
26515	Multilevel Methods for Nonlinear Structural Mechanics	\$179,235
26516	Algorithmic Support for Commodity-based Parallel Computing Systems	\$243,069
26517	Parallel Repartitioning for Optimal Solver Performance	\$242,807
26518	III-Antimonide/Nitride Based Semiconductors for Optoelectronic Materials and Device Studies	\$403,977
26519	The Integration of Advanced Photonics and MEMS	\$428,018
26520	Uncertainty Propagation in Models of Thermo-Fluid Systems	\$213,144
26521	Filtered Rayleigh Scattering Diagnostic for Multi-Parameter Thermal/Fluids Measurements	\$344,335
26522	A Physically-based Approach to Modeling Ductile Fracture	\$263,078
26523	Radiation Aging of Stockpile and Space-based Microelectronics	\$268,999
26524	Large Deformation Solid-Fluid Interaction via a Level Set Approach	\$276,888
26525	Magnetic-Field Effects on Vacuum-Arc Plasmas	\$215,852
26526	Microstructural and Continuum Evolution Modeling of Sintering	\$245,976
26527	Assuring Ultra-Clean Environments in Micro-system Packages: Irreversible and Reversible Getters	\$373,595
26528	Biocompatible Self-Assembly of Nano-Materials for Bio-MEMS and Insect Reconnaissance	\$342,134
26530	First-Principles Determination of Dislocation Properties	\$167,868
26531	Air Sterilization and Decontamination	\$81,954
26532	Data Fusion and Visualization of MASINT Results for Underground Facility Characterization	\$183,041
26534	Advanced Unattended Ground Sensor Technology	\$198,894
26535	The Endowment of Simulator Agents with Human-Like Episodic Memory	\$175,893

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SNL - Sandia National Lab

Project ID	Project Name	Total
26539	Algorithms for Improved Performance in Cryptographic Protocols	\$175,575
26540	Low Cost Digital Radar for Fuzing, Tags, SAR Imaging, and Targeting	\$266,983
26543	Adaptive and Mobile Ground Sensors	\$311,724
26544	Algorithm Development for Prognostic Health Monitoring & Maintenance	\$267,424
26545	New Mechanism for Upset of Electronics	\$158,745
26546	Flexible Robotic Maintenance Facility	\$321,051
26548	Obstacle Detection for Autonomous Navigation	\$344,673
26551	Novel Catalytic Systems for Energy Efficient Feedstock Hydrocarbon Separations	\$311,552
26552	A Model of Infrastructure Interdependency Using Communication Agents	\$350,057
26553	Micro-Chemical Sensors for Characterization and Monitoring of Volatile Contaminants	\$374,404
26554	Investigation of Potential Applications of Self-Assembled Nanostructured Materials in Nuclear Waste Management	\$303,927
26555	Development of Detection Techniques and Diagnostics for Airborne Carbon Nanoparticles	\$130,841
26557	Specific Anion Nanoengineered Sorbents for Water Purification	\$348,917
26563	Advanced Digital Detectors for Neutron Imaging	\$201,222
26564	Microfabricated Acoustic Spectrum Analyzer	\$443,162
26572	Coating Chemical Preconcentrators to Improve Chemical Agent Collection	\$182,982
26574	Detection and Exploitation of Spread-Spectrum Waveforms	\$512,719
26577	Robust Chemometrics for Remote Spectral Sensing	\$268,851
26578	Deployable Large Aperture Optics System for Remote Sensing Applications	\$277,551
26581	Molecular-Scale Studies of Single-Channel Membrane Pores	\$294,190
26582	Efficient Massively Parallel Techniques for Protein Structure Generation	\$133,210
26583	Mapping Membrane Protein Interactions in Cell Signaling Systems	\$363,619
27328	A Revolution in Lighting: Building the Science and Technology Base for Ultra-Efficient Solid State Lighting	\$3,434,971
28769	Z-Pinch Power Plant System Development	\$142,856
28770	Recyclable Transmission Line Concept for Z-Pinch IFE	\$136,782
28771	Suppression of Electron Emission from Conductors	\$148,630
28772	Solid State Switch for Advanced Pulsed Power	\$208,781

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SNL - Sandia National Lab

Project ID	Project Name	Total
28775	Laboratory-Scale Coherent Multi-Kilovolt X-Ray Sources for Advanced Imaging Applications	\$504,624
28776	Interfacial Bioscience Grand Challenge (IBIG)	\$4,087,864
32574	High-throughput Instruments, Methods, and Informatics for Systems Biology	\$428,738
32807	Low Work Function Material Development for the Microminiature Thermionic Converter	\$295,708
32809	Autonomous Micro-Explosive Subsurface Tracing System	\$305,673
32816	Vulnerability Assessment of National Power Grid	\$310,713
32817	Molecular Simulations of MEMS and Membrane Coatings (PECASE)	\$58,275
32913	Aging Mechanisms in Dormant MEMS Structures	\$343,814
32914	Biomimetic Chloroplasts: An Integrated Microdevice Power Source	\$201,637
32915	Study of Polymer Spin-Coating for Photolithographic Semiconductors in Near Zero Gravity Environment	\$26,182
32923	MEMS in μ Fluid Channels	\$311,806
33602	Dispersive Photonics for Next-Generation Sensors and Microsystems	\$468,174
34465	Understanding Metal Vaporization from Transient High Fluence Laser Irradiation	\$82,878
34466	Mechanics and Tribology of MEMS Materials	\$265,277
34467	Dynamics of Metal/Ceramic Interfaces	\$162,823
34468	In Situ Characterization of Soft Solution Processes for Nanoscale Growth	\$96,881
34469	Determination of Critical Length Scales for Corrosion Processes using Microelectroanalytical Techniques	\$162,577
34478	LIGA Microsystems Aging: Evaluation and Mitigation	\$358,753
34485	Science Based Processing of Field Structured Composites	\$88,360
34692	Self-Assembly of Polymers in Confined Geometries	\$28,494
34693	Building Conscious Machines Based Upon the Architecture of Visual Cortex in the Primate Brain	\$24,407
34698	Microfuze	\$554,085
34699	Exploration of New Multivariate Spectral Calibration Algorithms	\$145,763
35376	Development of Experimental Verification Techniques for Non-linear Deformation and Fracture	\$50,000
36902	Mathematical Analysis of Deception	\$40,852
36904	A System Dynamics Approach to Modeling Water Demand	\$40,000

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SNL - Sandia National Lab

Project ID	Project Name	Total
38605	Microfabrication with Femtosecond Laser Processing	\$315,160
38606	Meso-scale Controlled Motion for a Microfluidic Drop Ejector	\$357,425
38608	Science-Based Sensing of Phase Transformations In Steels	\$130,187
38609	Physical and Electronic Changes caused by Membrane Signaling as a Transduction Pathway in Affinity Based Biosensors	\$292,352
38610	Graduated Embodiment for Sophisticated Agent Evolution and Optimization	\$309,571
38611	Stochastic Programming for Enterprise Modeling -- Optimization for Nondeterministic Simulation	\$240,701
38612	Robust Message Routing for Mobile (Wireless) Ad Hoc Networks	\$298,703
38613	Scalable Fault Tolerant Algorithms for Linear-Scaling Coupled-Cluster Electronic Structure Methods	\$227,257
38614	Micromagnetic Suspension	\$155,270
38615	Sensitivities for Large-scale Simulation Codes	\$218,255
38616	Engineered Superconductivity in Electron-hole Bilayers	\$267,315
38617	Silicon-based RF MEMS Components	\$443,557
38618	Arrayed Resonant Subwavelength Gratings	\$354,621
38619	Nano-electromechanical Oscillators (NEMOs) for RF Filtering	\$293,013
38620	Continuous Wave Intersubband Terahertz Sources	\$454,025
38621	Microsystems for Chemical Signature and Reagent Delivery	\$301,349
38622	Microfluidic Cellular Sample Pretreatment	\$514,063
38623	Automated Visual Direction of Mobile Manipulation	\$323,731
38624	Miniature Fourier Transform Ion Mobility Spectrometer for Real Time Detection and Identification of Explosives and Chemical Agents	\$194,775
38625	CONOPS Development for Automated Systems	\$334,294
38626	Rapid Mitigation and Decontamination of Toxic Industrial Chemicals	\$246,368
38627	EM Interactions with Systems to Enhance Security	\$122,245
38628	Adaptive Awareness for Personal and Small Group Decision Making	\$346,532
38629	Use of Seismic and Acoustic Responses to Assess Bomb Damage to Underground Facilities	\$179,704
38655	Free-Space Electro-Optic Sampling and Remote Mapping of Electromagnetic Fields from Emitting Structures Using Femtosecond Terahertz Transceivers	\$255,946
38659	Information Assurance for Wireless Ad Hoc Networks	\$318,822

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SNL - Sandia National Lab

Project ID	Project Name	Total
38661	Low Toxicity Hypergolic Propellant System using H2O2 Oxidizer	\$11,826
38662	Natural Gas Production Problems: Solutions, Methodologies, and Modeling	\$307,893
38664	High Efficiency Turbine Blade Coatings	\$150,683
38665	Time Domain Reflectometry for Remote, Real-Time Water Quantity/Quality Monitoring of Perennial and Ephemeral Streams	\$241,334
38667	Research and Development of Mathematical Algorithms to Define and Quantify Critical Infrastructure Interdependencies	\$163,773
38668	Functionalized Nanoelectrode Arrays for In-situ Identification and Quantification of Regulated Chemicals in Water	\$351,464
38669	Hybrid Infrastructure Cryptography	\$289,851
38672	Validated Modeling of Distributed Energy Resources at Distribution Voltages	\$95,228
38673	Water Desalination	\$308,746
38674	Revolutionary Systems for Catalytic Combustion and Diesel Catalytic Particulate Traps	\$409,257
38677	Potential Application of Microsensor Technology in Radioactive Waste Management - With Emphasis on Headspace Gas Detection	\$239,971
38678	Surety Enhancement for Wireless Automated Control Networks	\$238,113
38679	Advanced Nuclear Engineering Analysis Technology	\$243,065
38681	Identification of Chemical Plumes: Range-Resolved IR Lidar Enabled by New Photonic Technologies	\$455,117
38682	Multiscale Thermal Modeling	\$300,818
38684	A Robust, Coupled Approach for Atomistic-Continuum Simulation	\$282,040
38685	Microscale Rarefied Gas Dynamics and Surface Interactions for EUVL and MEMS Applications	\$352,210
38686	High Fidelity Frictional Models for MEMs	\$408,897
38687	Soot Formation, Transport, and Radiation in Unsteady Diffusion Flames	\$304,189
38688	The Basics of Aqueous Nanofluidics: "Interphase" Structure and Surface Forces	\$293,501
38689	Design, Synthesis, and Characterization of Soft Matter Nanolayer Superlattices	\$297,719
38690	Photo-control of Nano-interactions in Microsystems	\$278,883
38691	Electrochemically Deposited Alloys With Tailored Nanostructures for LIGA Micromachines	\$339,613
38692	Nanostructured Materials for Directed Transport of Excitation Energy	\$294,046

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SNL - Sandia National Lab

Project ID	Project Name	Total
38693	Modeling Local Chemistry in the Presence of Collective Phenomena	\$168,207
38695	Passive-legged, Multi-Segmented, Robotic Vehicle	\$232,066
38696	Low Cost Photonic Lattice Structures for Remote Sensing	\$329,746
38698	Security Monitoring and Management with Information Technology (SUMMIT)	\$196,100
38699	Novel Methods for Ultra-Compact, Ultra-low-power Communications	\$247,852
38701	Novel Tagging Technologies for the Tracking and Authentication of Documents, Property, and Other Items	\$180,223
38702	A Revolutionary Long-lived Power-supply: The Icosahedral Boride Semiconductor (IBS) Beta-Cell	\$486,832
38703	Remote Sensing Data Exploitation for Geologic Characterization of Difficult Targets	\$355,128
38705	The Effects of Varying Humidity on Copper Sulfide Film Formation.	\$195,890
38706	Detecting and Tracking the Active Insider Using 3D Detection Technology	\$191,654
38707	Microfabricated Dielectrophoretic Sample Preparation System	\$289,800
38708	Automation of Microelectronic Physical Analysis	\$236,413
38712	Nonlinear Optical Limiters Using Photonic Bandgap Structures For Sensor Protection	\$299,349
38713	Secure MPLS Control Plane for Internet Connectivity	\$226,000
38717	Nano-Scale Energetic Materials By Inverse Micellar Synthesis	\$295,013
38718	Modeling of Rock Penetration	\$190,998
38722	Agile, Microsystems-Enabled Receiver	\$583,347
38744	Adaptive Network Countermeasures	\$184,397
39017	Solution-Based Nanoengineering of Materials	\$318,816
39212	MEMS-Based Electromechanical Acoustic Energy Harvester	\$25,000
39669	Determination of Microstructural Properties With Isentropic Compression	\$187,730
39670	Simulations of Intense Petawatt Laser Pulses with Dense Z-Pinch Plasmas	\$250,684
41193	Bio MicroFuelCell	\$1,929,068
41194	Augmented Cognition: Next-Generation Intelligent Systems	\$1,815,334
41427	Predicting and Validating MEMS Interface Reliability	\$354,880
41674	MicroEngine for Advanced Power Generation	\$379,507
41726	Direct Simulation of Solid-Fluid Systems	\$40,000

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SNL - Sandia National Lab

Project ID	Project Name	Total
42461	Support-Active Site Interactions in Heterogeneous Catalysts	\$99,885
42483	An Analysis of the Automotive Industry as a Source for Weapon Components and Manufacturing Processes	\$242,882
44136	Fluid-Structural Interactions in Wetting and Penetration into Porous Media	\$74,792
45279	Macroscopic Rates, Microscopic Observations, and Molecular Models of the Dissolution of Carbonate Phases	\$72,066
46070	High Speed Micro-EDM	\$40,000
46685	Nanoscale Hotspots Due to Nonequilibrium Thermal Transport	\$40,000
46686	Micro External Combustion Engine: The P3 Engine Prototype	\$20,330
47517	Mathematical and Algorithmic Issues in Multiphysics Couplings	\$24,962
47795	Lipid Membranes on Nanostructured Silicon	\$31,743
48746	Digital Signal Processing for Acoustic-Seismic Target Identification	\$194,971
49769	Resin Infusion between Double Flexible Tooling	\$22,530
49770	Frameworks for Nuclear Process Transparency and Control	\$99,253
49772	Studies on the Disbonding Initiation of Interfacial Cracks	\$40,000
49915	Critical Technology Development for Hard Target Defeat High-G Tolerant Fuze and High Explosives	\$1,702,709
50065	TALON	\$3,992,318
50396	Compliant Membranes for MEMS Microphones	\$25,000
50717	Multi Scale Experimental/Numerical Study	\$50,000
50772	Cellular Observatory: Simultaneous Time- and Frequency-Resolved Microscopy	\$233,739
52174	In-elastic Deformation Mechanism in Shocked Sapphire Single Crystals	\$20,000
52523	Atomic Layer Deposition of Highly Conformal Tribological Coatings	\$364,809
52524	Assembly of Microsystems using Exothermic Multilayer Thin Films	\$307,056
52526	Intelligent Interaction Control as Applied to Metrology and Assembly of Micro-Scale Components	\$347,736
52527	Rapid Prototyping High-Density Circuitry (RpHdc)	\$344,954
52528	Elucidating the Mysteries of Wetting	\$378,632
52530	Next Generation Spindles for Micromilling	\$108,304
52531	Assembly and Actuation of Nanomaterials Using Active Biomolecules	\$482,191
52532	Modeling Biomembranes	\$346,883

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SNL - Sandia National Lab

Project ID	Project Name	Total
52533	Reverse Engineering Biological Networks: Applications in Immune Responses to Bio-Terrorism Threats	\$339,821
52536	High Throughput Identification of Molecular Machines Involved in Membrane Signaling and Toxin Pathways	\$286,594
52537	Coupled Solid-fluid-mechanical Computational Modeling of Fracture and Fragmentation in Geomaterials, Such as Hard and Deeply Buried Targets (HDBT)	\$341,687
52538	Sequestration of Pathogens on Nanoengineered Surfaces	\$504,858
52539	A Combined Preconcentrator and Sensor for Live Water-borne Pathogens	\$203,311
52540	IP Storage: A Performance and Security Study	\$206,740
52541	A Parallel Circuit Simulator for Cell Biology	\$211,573
52542	Developing a Computationally Efficient Dynamic Multilevel Hybrid Optimization Scheme using Multifidelity Model Interactions	\$269,863
52543	Robust Large-Scale Parallel Nonlinear Solvers for Simulations	\$198,248
52544	Development of Computational Algorithms and Inversion Capabilities for Transport/reaction Simulations of Chemical/biological/radiological Terrorist Attack Scenarios in Support of Homeland Security	\$439,800
52546	Massively-Parallel Linear Programming	\$149,027
52548	Active Photonic-Crystal Devices for Integrated Photonics and Silicon photonics	\$453,267
52549	Co-processing of Chalcogenide-Based Radiation-Hard Nonvolatile Memories by Sandia's MDL and BAE Systems.	\$316,170
52551	Functionalized Nanoparticles for Sensor Applications	\$422,992
52552	Novel In Situ Mechanical Testers to Enable Integrated Metal Surface Micro-machines	\$368,724
52553	Compliant Thermo-Mechanical MEMS Actuators	\$340,746
52554	An Integrated, Stacked System-on-a-chip	\$195,190
52555	Micro Mass Spectrometer on a Chip	\$350,909
52556	Quantum Coherence in Semiconductor Nanostructures for Improved Lasers and Detectors	\$350,609
52557	MOSFET-MEMS Integration	\$342,209
52566	Micro Optical Gyroscope Via Monolithic Active/Passive Optical Integration	\$375,972
52570	Materials Physics and Device Development for Improved Efficiency of GaN HEMT High Power Amplifiers	\$473,886
52571	Leaky-mode VCSELs for Photonic Logic Circuits	\$444,632

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Project ID	Project Name	Total
52575	Advanced Polychromator Systems for Remote Chemical Sensing	\$347,277
52577	Immunological Basis for High Reliability Systems Control	\$245,891
52579	Miniaturization of SAR Electronic Assembly Using Sandia's Integrated Substrate Technology	\$101,369
52580	Moving Target Identification Using Ultra High Range Resolution Data	\$98,850
52581	Advanced Mobile Networking, Sensing, and Controls using Graph Theory	\$341,271
52582	Compact TeraHertz (THz) Sources for ET applications	\$332,576
52583	Understanding Communication in Counterterrorism Crisis Management	\$319,784
52584	Hyper-Velocity Impact Generated Flash	\$99,226
52585	Improving Human/System Interactions in Systems-of-Systems	\$269,449
52586	Distributed Detection & ID Algorithm Architecture for Unattended Ground Sensors	\$159,543
52587	Secure Chaotic Communications	\$89,807
52588	System of Systems Modeling and Analysis	\$346,142
52589	Eye Safe Short Range Standoff Aerosol Cloud Finder	\$153,099
52590	Micro Flame-Based Detector Suite for Universal Gas Sensing	\$250,057
52591	Beyond Nanoparticles - Attack on a Chemical "Holy Grail"	\$250,638
52592	Advanced Proton-Exchange Materials for Energy Efficient Fuel Cells	\$397,996
52593	Alanate-Hydride Fuel Cell Demonstration Project	\$305,705
52594	Vapor-liquid Phase Behavior of the Iodine-sulfur Water Splitting Process	\$235,009
52595	Real-time Discriminatory Sensors for Water Contamination Events	\$312,062
52596	Advanced High Efficiency Direct Cycle Gas Power Conversion Systems for Small Special Purpose Nuclear Power Reactors	\$339,851
52597	Securing Mobile Code	\$288,550
52598	Novel Catalysts For Hydrogen Fuel Cell Applications	\$300,650
52606	Linking Optimization and Simulation in Critical Infrastructure Systems	\$345,560
52608	The Mechanism of Permeable Reactive Barrier Formation and Field Test of an Packed Bed for Arsenic Removal from Water	\$259,873
52609	Analysis of Nano-scale Films and Particles	\$70,553
52611	Radiation-Transport Method to Simulate Noncontinuum Gas Flows for MEMS Devices	\$112,380
52613	Tensegrity - smart, Adaptive Structures Through Material Biomimicry	\$67,890

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Project ID	Project Name	Total
52615	Coupled Acoustical/structural Simulations of Weapons Systems	\$100,292
52698	Decomposition of Contaminants Using Photochemically Active Nanoparticles	\$423,235
52699	Thermally Cleavable Surfactants	\$296,412
52700	Transition-metal Catalyzation of Complex-hydride Absorption/desorption Reactions	\$198,520
52701	Quantification of Environments and Surfaces within Micro-Packages	\$391,813
52702	Assembly of Ordered Electro-Optical and Bioactive Materials and Composites	\$413,067
52703	Advanced Packaging / Joining Technology for Microsystems	\$326,891
52705	Magnetostrictive Elastomers for Actuators and Sensors	\$152,736
52706	Development of a High-Throughput Microfluidic Integrated Microarray for the Detection of Chimeric Bioweapons.	\$166,548
52707	Active Network and Use of Network Processor	\$252,694
52708	Zero-Power Radio Receiver	\$252,227
52709	Completely Passive Microwave Tag	\$250,391
52710	Security Coatings for Multichip Modules	\$287,684
52711	Detailed Modeling and Simulation of Contaminant Transport in Architectural Spaces	\$341,666
52712	Content-Based Video and Image Indexing System	\$198,725
52713	Bioaerosol Collection & Concentration for Microseparations-based Detectors	\$556,112
52714	Detecting The Toolmarks Of Genetic Engineering In Bioweapons Strains	\$282,329
52716	Joint Authentication/Encryption	\$192,131
52717	Ultra High Temperature Ceramics for Hypersonic Vehicle Applications	\$242,828
52718	Leveraging Robotic Planning for Physical Security Analysis	\$249,266
52719	Buzzard	\$56,773
52720	Ultra-Lightweight Telescope with MEMS Adaptive Optic for Distortion Correction	\$430,859
52721	Modeling Signals from Earth Penetrating Nuclear Weapons for Remote Kill Assessment	\$279,239
52722	Radiation Hardened Optoelectronic Components for Space-based Applications	\$200,538
52723	Novel Micro-Preconcentrators For CW, Explosives And Water Surety	\$254,363
52724	Ion Mobility Spectrometer-Mass Spectrometer	\$268,716
52725	Cryptographic Assurance of Execution Correctness and Confidentiality	\$363,037

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Project ID	Project Name	Total
52726	Characterization, Performance and Optimization of PVDF as a Piezo-electric Film for Advanced Space Mirror Concepts	\$299,688
52727	Predictive Accelerated Aging of Microsystems: The Science of Dormancy	\$731,850
52728	Surety and Accountability Enhancements for Storage Containers	\$297,834
52729	Nuclear Safety Weaklinks for Thermal and Mechanical Environments	\$401,293
52730	Advanced Packaging Technology for Optical Firesets	\$312,729
52731	Miniature Transmitter Filter for JTA Using LIGA Technology	\$312,316
52732	Novel and Robust Environmental Sensing Devices (ESDs)	\$430,947
52733	Advanced Neutron Monitors for JTA and Stockpile Monitoring	\$325,921
52737	Development of an Efficient Large-Aperture High Damage-Threshold Sol-gel Diffraction Grating	\$141,917
52738	Laser Triggering of Water Switches in Terrawatt class Pulse Power Accelerators	\$100,757
52739	Experimental and Computational Study of Liquid-Liquid and Freezing Phase Transitions	\$96,360
52740	A MicroBioReactor for Hydrogen Production	\$102,479
52741	Self Organizing Software Research and Development	\$295,684
52742	Highly Specific Electronic Signal Transduction Mediated by DNA/Metal Self-Assembly	\$101,777
52743	Computational Model of a Microbial Cell	\$95,335
52744	Biomimetic Air Sampling for Detection of Low Concentrations of Molecules and Bioagents.	\$99,591
52745	A Biological Model for Controlling Interface Growth and Morphology	\$113,799
52746	Nanostructured Polyoxometalate Arrays with Unprecedented Properties and Functions	\$102,086
52747	Ornithopter	\$40,208
52748	Light-powered Nano-vehicles	\$100,297
52749	Anomalously High Photocurrents in Nanostructured Electrodes: a new local microchip power source	\$86,420
52750	Quantum Computing Accelerator I/O	\$130,106
52797	Design and Control of the Magnetic Properties of Nanoparticles	\$50,000
52825	Aerospace Vehicle Trajectory Optimization System by Primer Vector Methods	\$25,000
52826	Algorithm Development for Smart Antennas	\$13,000

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Project ID	Project Name	Total
52976	Failure Analysis and Surety Design of Composite Patching Systems	\$13,300
52977	Flow Control and Mixing in Microfluidic Devices	\$20,000
53342	Investigations into the Transient Analysis of System Reliability/Availability via Cumulant Functions	\$0
53372	Topological Layout for the Optimal Design of Electrostatically Actuated MEMS	\$20,000
53464	Atomic-scale Scanning Tunneling Microscopy Measurements of Nucleation and Growth of Ge/Si Alloy Structures	\$40,517
53465	Micro/Nanoscale Thermomechanical Manufacturing	\$20,000
53585	Novel Diagnostics for Rarefied Flows in MEMs Applications	\$214,242
53586	Geophysical Subsurface Imaging and Interface Identification	\$241,774
53587	Evolution of Near Surface Scalar Concentrations Through a Compact Cylinder Array Embedded in the Atmospheric Surface Layer	\$30,402
53588	Miniature High-Power RF Components Enabled by Meso-scale Manufacturing	\$263,055
53589	Electron and Proton Beam Directed Energy Defense Weapons	\$205,287
53590	Electrical Conductivity of Metal Alloys	\$203,206
53591	Hydrogen Futures Dynamic Simulation Model	\$254,494
53681	Design of Bio Specific Surfaces to Control Specific Cellular Responses	\$20,000
53682	High-field Effects of GaN HEMTs	\$20,000
54210	Cognitive Models Applied to Human Effectiveness in National Security Environments	\$13,300
54211	Nanomagnetic Films	\$20,000
54213	A Multi-scale Approach to Modeling Carbon Nanotube Reinforced Composites	\$20,000
55079	Near Real Time Characterization for Assured HDBT Defeat	\$1,163,826
55086	Prompt Global Response	\$891,868
55087	Winning the War: A Systems Approach to Defending Our Borders	\$1,710,439
57300	Integrated Superhard and Metallic Coatings for MEMS	\$47,937
57307	Microscale Separations of Biological Compounds Using Novel Polymeric Separations Materials	\$49,881
57308	Friction in Micromachine Interfaces	\$47,595
57309	Lipid Microarray Biosensor for Biotxin Detection	\$40,000
57310	Advanced Manufacturing Techniques Using Rapid Prototyping	\$39,325
57311	Robust Hermetic Packaging Techniques for MEMS Integrated Microsystems	\$40,236

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SNL - Sandia National Lab

Project ID	Project Name	Total
58336	Surfactant Effects On Lateral Growth And Surface Morphology of GaAs	\$10,000
58907	Active Photonic Nanostructures	\$516,598
59034	3-D Large Eddy Simulation of Turbulent Flow based on One-Dimensional Turbulence Modeling	\$94,572
59916	A Method of Evaluating Research Using New Innovation, Risk, and Impact Indicators	\$98,759
60626	The Derivation and Implications of 'Nearly Non-informative' Priors from Metadata-conditioning	\$57,847
60627	New Seismic Event Detection Technology	\$74,862
60628	Dynamic Simulation Modeling and Analysis Support for Senate Energy and Natural Resources Committee	\$79,399
60866	SDAC Architectural Study and Demonstration System Development	\$190,540
61045	Testing Recent Metal/Oxide Joining Discoveries in NW Component Manufacturing	\$118,441
61046	Photonic Encryption using All-Optical Logic	\$103,426
61047	Automated Video Screening for Unattended Background Monitoring in Dynamic Environments	\$99,064
62269	Nanoporous-Carbon Adsorbers for Chemical Microsensors	\$120,935
62270	Assessment of Information Flow Associated with Goods and People Crossing International Borders	\$79,796
62826	Automatic Detection of Anomalous Weapon Surveillance Waveforms	\$58,925
62827	Non-Lethal Technologies for the War on Terrorism	\$652,368
62970	Computational Social Dynamic Modeling of Groups Perpetrating Violence	\$173,583
62971	Development of a Terrorist Activity Plan Assessment Methodology	\$189,363
62972	Development of an Interactive Nuclear/WMD Terrorist Data Model	\$70,586
63965	Hyperspectral Tagging for Unique Identification	\$39,837
63966	Smart Decoy Sensor Network	\$49,850
63967	Fusing MSI and HSI Imagery for Subpixel Spectral Unmixing	\$70,067
63968	Monomolecular Carbon Nano-Thread Fabrication	\$50,073
63969	Reliability Data to Improve High Magnetic Field Coil Design for High-Velocity Coilguns	\$57,969
63970	Sandia Dual-Use Formulation for CBW/Fire Suppression Capabilities	\$52,456
63971	Enabling Technology for Human Collaboration	\$193,988

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SNL - Sandia National Lab

Project ID	Project Name	Total
63972	Molecular Electronics Test Platform	\$98,123
64214	Study of 3-D Focal Region Sounding Applied to Large Aperture Telescopes	\$24,293
64215	Affordable, Automated Computed Tomography (CT) X-ray Screening for Large Vehicle Bombs Preliminary Study	\$61,350
64355	Coordinated Weapon-Platform Control Strategies for Intelligent Targeting	\$75,124
64356	Advanced Weapons Signatures	\$65,082
64385	Universal Detection for Chem-Bio Sensing in Microfluidic Systems	\$66,342
64386	Large-Scale System Dynamics Modeling of Water Resources on the Rio Grande	\$24,247
64709	Development of Highly Integrated Magnetically and Electrostatically Actuated Micropumps	\$25,992
64711	Wide-Area Surveillance in Synthetic Aperture Radar Images	\$47,819
64811	Agent-Based Control of Distributed Infrastructure Resources	\$126,868
65148	Multipurpose Locator-Tag System	\$39,769
65556	A Robotic Framework for Semantic Concept Learning	\$20,000
65557	Optical Trapping of Collisionally Cooled Molecules	\$81,831
65558	Detection and Reconstruction of Error Control Codes for Engineered and Biological Regulatory Systems	\$72,757
65559	Direct Single Ion Machining of Nanopores	\$51,542
65828	Measures of Effectiveness and Performance for MicroTalon SDAC Technologies and Systems	\$56,884
66159	Creative Networking of Commercial Products	\$46,494
66160	Networked Device Demonstration	\$41,771
66161	Analysis of Multichannel Internet Messaging	\$41,868
66170	Investigation of the Effects of Intense Pulsed Particle Beams on the Durability of Metal-to-Plastic Interfaces	\$37,143
66233	Efficacy of the Sandia Decon Formulation on the SARS Coronavirus	\$99,529
66450	Advanced Techniques for Multi-Objective Discrete Optimization	\$20,000
66610	Fundamentals of Mobile Robot Development	\$50,000
66809	Non-radioactive Safety & Performance Issues with Supercritical Water Reactor Safety (SCWR) Technologies	\$25,000
66810	Radiation Performance Issues with Advanced Coolants for Next Generation Reactor	\$25,000

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SNL - Sandia National Lab

Project ID	Project Name	Total
67542	Harnessing Methane Hydrate-Bacteria Interactions for Energy Source and Storage Application	\$39,965
67716	Smart Detectors of Enrichment of Bio-Aerosols	\$20,000
68063	Computational Studies of JP-8 Diffusion Flames with Detailed Chemistry and Particulate Formation	\$20,000
68552	Investigation of Bioprocesses for Advanced Manufacturing Applications	\$0
Total # of Projects for SNL:	366	Total Cost for SNL: \$97,818,916

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SRP - Savannah River Plant

Project ID	Project Name	Total
SR01005	Atomic Oxygen for Decontamination of Tritium from Surfaces	\$65,999
SR01008	Tritium Exchange Material for Tritium Stripping from Glovebox Atmosphere	\$110,788
SR01014	Surface Plasmon Resonance Spectroscopy-Based Process Sensors	\$77,997
SR01016	Miniature Mass Spectrometer for Gas Analysis	\$10,204
SR01017	Fiber Optic Raman Spectroscopy Sensor	\$65,148
SR01023	New Sol Gel Tritium Scintillation Detector	\$53,932
SR02015	Alanates as a New High Capacity H ₂ /T ₂ Storage Material	\$184,805
SR02016	Catalyzed Metallic Glass for H ₂ Separation	\$67,178
SR02023	Hydrogen Isotope Permeation Testing	\$171,285
SR02031	Large-scale Fabrication Process for Hydride/Sol-Gel Composites	\$189,285
SR02033	Laser Cladding for Tritium Permeation Barrier Coatings	\$139,158
SR02042	Thermal Absorption Diffusion Isotope Separation Process	\$240,962
SR03000	Management Reserve	\$10,345
SR03001	Plasma Arc Process to Decontaminate Palladium for Recycle	\$13,711
SR03002	Discover New Hydride Metal-alloys Using the "Materials as Systems" & "Combinatorial Library Synthesis" Methodologies	\$87,169
SR03004	Modeling of Pressure Swing Adsorption Processes For Hydrogen Separations	\$37,932
SR03005	Fill Stem Decontamination Using Plasma and/or Atomic Oxygen	\$65,857
SR03006	Heat Transfer and Modeling of Next Generation Metal Hydride Beds	\$88,355
SR03008	Catalyzed Alkali Metal Borohydrides for Tritium and Hydrogen Storage	\$108,309
SR03014	Glass Microsphere Encapsulation of Hydrogen Absorbents	\$44,601
SR03029	Evaluation of Alternate Stainless Steel Surface Coatings and Methods for Passivation	\$32,471
SR03030	Evaluation of Non-Reactive, Permeation Resistant Materials for Tritium/Hydrogen Storage & Processing	\$74,333
SR03036	Tritium Reservoir Performance Prediction and Analysis Tools	\$90,883
SR03037	Pinch Weld Process Improvement Using Secondary Variable Analysis and Advanced Weld Controls	\$138,490
SR03038	Development of a Stainless Steel Alloys with an Innate/Self-Healing Permeation Barrier	\$80,675
SR03046	Multiplexed Vapochromic Ammonia and Moisture Sensors for Tritium Process Monitoring	\$71,836

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SRP - Savannah River Plant

Project ID	Project Name	Total
SR03052	Universal Tritium Transmitters	\$47,819
SR03053	Ion Chamber for Tritium Monitoring to Minimize High Backgrounds Due to Surface Area Contamination	\$46,861
SR03054	Tritium Reservoir Surface Defect NDE Inspection Feasibility Study	\$68,992
SR03060	Palladium on Ceramic as an Alternative to Palladium on Kieselguhr	\$23,895
Total # of Projects for SRP:	30	Total Cost for SRP: \$2,509,275

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Y_12 - Y-12 Plant

Project ID	Project Name	Total
Y1201006	Net Shape Forming (NSF)	\$58,765
Y1201013	Microwave Heating Technology for Uranium Annealing	\$73,206
Y1201020	Rapid in-situ identification of fissile material type in cans	\$58,774
Y1201021	Direct Electrolytic Reduction of U Oxides (DERO)	\$191,628
Y1201024	A New Approach to Bright, High-Resolution X-Ray and Electron Screens for Digital Imaging	\$61,263
Y1201029	Real-Time Beryllium Oxide (BeO) Air Monitoring	\$261,300
Y1201030	High Energy Beam cutting Processes for disassembly	\$48,105
Y1201033	Enhanced Absorption of Microwave Energy by Near-Molten Metals	\$140,277
Y1201039	Development of Real-Time Monitor For Measuring Beryllium In Air	\$198,474
Y1201043	High-density, non-contact inspection of workpieces	\$154,757
Y1201044	Binary by SDOR	\$59,714
Y1201049	Non-Contact Ultrasonic Inspection	\$27,494
Y1201053	Advanced Technology Assessment Team	\$90,208
Y1202005	Hand-Held Enrichment Meter	\$138,407
Y1202006	Silicone Rubber Scintillator with High Boron Content	\$71,945
Y1202007	Alternative Fluorinating Agents to Produce UF ₄	\$63,180
Y1202009	Real Time Identification of Airborne Particles	\$71,776
Y1202012	Novel Vision System for Production Welding	\$42,155
Y1202014	Advanced Melting Process using Infrared Technology	\$532,911
Y1202015	Infrared Preheating of Uranium Billets	\$195,092
Y1202031	Denaturing	\$69,924
Y1202036	Waste Minimization of Uranium Solutions Using Chromatographic Separations	\$68,797
Y1202039	Equal-Channel Angular Processing (ECAP) to Develop Fine-Grained, Homogeneous Microstructures	\$121,898
Y1202040	Microstructure Control through Orientation Imaging Microscopy	\$130,881
Y1202044	Alternate Route to UF ₄ Manufacture	\$67,967
Y1202051	Separation of Uranium from Slag	\$15,348
Y1202052	Advanced Dynamic Data Analysis Capability	\$67,428
Y1202053	High Resolution Imaging System	\$232,402
Y1202095	Metal Preparation Modeling	\$93,904

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Y_12 - Y-12 Plant

Project ID	Project Name	Total
Y1202096	Zone Refining	\$161,637
Y1202097	Alternate Uranium Casting	\$323,098
Y1202098	Inverse Uncertainty Analysis	\$99,489
Y1202099	Predictive Performance Indicators for the Continuous Automated Vault Inventory System (CAVIS™)	\$170,148
Y1202100	Error Budget Analysis of Slant Bed Lathe	\$129,277
Y1202101	Devices for automation of Frequency Response Function Measurement for High-speed Machining	\$92,080
Y1202102	FU Radiation Detectors based on I-III-VI ₂ Crystals	\$32,664
Y1202103	TSU Fuzzy Logic Analysis of Measurement Uncertainty	\$87,186
Y1202105	UNCC Hole-plate artifact assessment	\$2,794
Y1202106	UFL High Speed Machining Surface Location	\$3,450
Y1202107	NCSU Design and Fabrication of Measurement Artifacts Principal	\$6,699
Y1203001	Radiograph archival	\$11,010
Y1203006	Enhanced Chip Casting	\$35,853
Y1203010	U-C Phase Diagram	\$167,532
Y1203014	High-accuracy, high data density measurement uncertainty	\$3,504
Y1203016	Salt Certification Substitution	\$101,231
Y1203020	Optic Flaw Detector	\$31,756
Y1203021	Micro CT	\$22,803
Y1203023	SFM Process Monitoring	\$16,228
Y1203032	High Speed Machining	\$170,209
Y1203039	Advanced SDOR	\$74,293
Y1203043	ID of Ultra-fine Particles	\$29,528
Y1203050	Lugless Casting	\$28,715
Y1203051	Multi-Zone Furnace	\$10,318
Y1203059	Magnetic Filtration of Particulate Containing Uranium	\$89,235
Y1203065	Enhanced Active Seal System	\$121,041
Y1203073	LiH Assessment	\$3,091
Y1203074	IWMS	\$643,082

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Y_12 - Y-12 Plant

Project ID	Project Name	Total
Y1203075	Project2	\$2,950
Y1203076	Tech Infusion	\$23,657
Total # of Projects for Y_12: 59		Total Cost for Y_12: \$6,102,538